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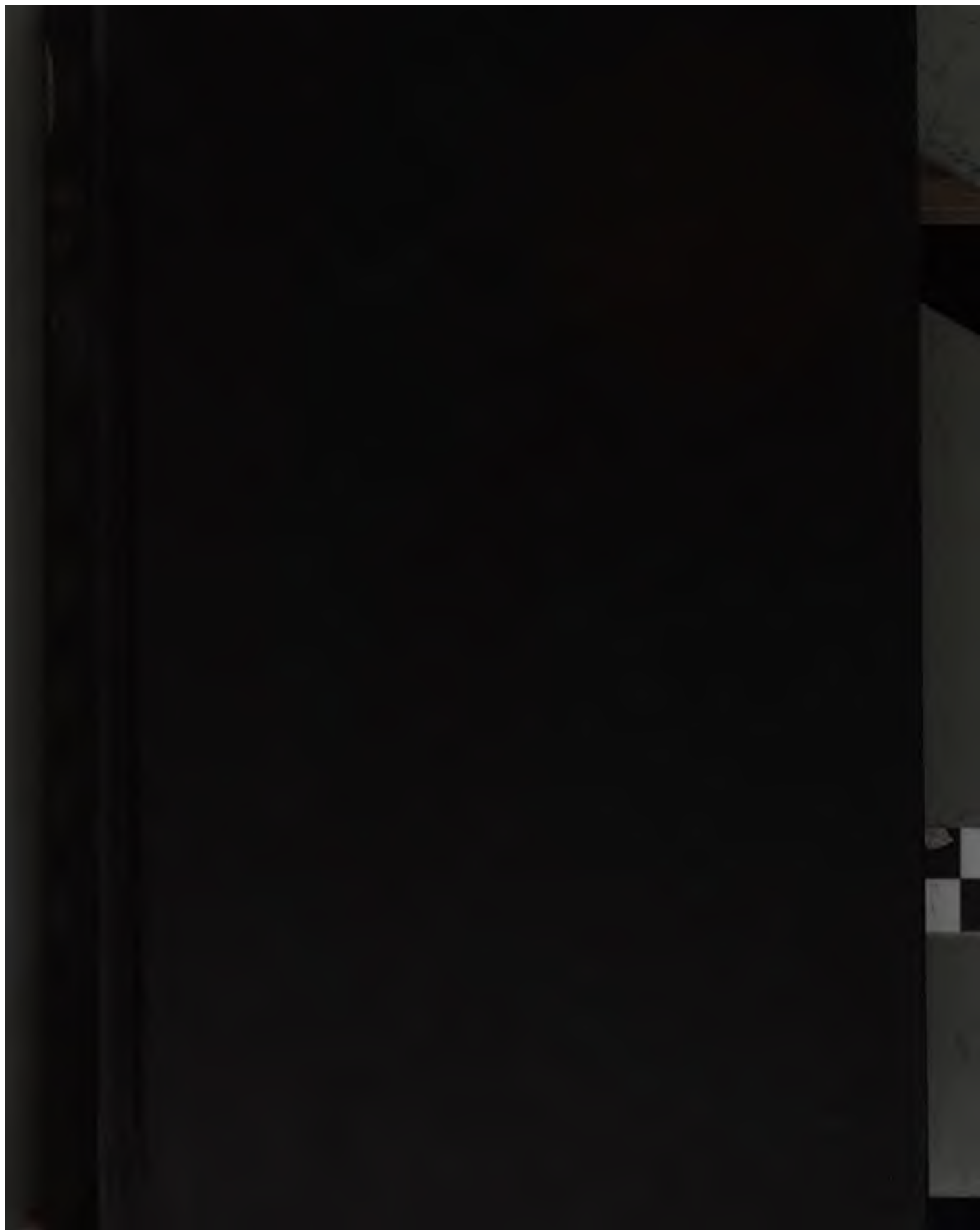
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THE BUSINESS OF INSURANCE

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THE BUSINESS OF INSURANCE

A TEXT BOOK AND REFERENCE WORK
COVERING ALL LINES OF INSURANCE

WRITTEN BY
EIGHTY EMINENT EXPERTS

COMPILED AND EDITED
BY
HOWARD P. DUNHAM

In Three Volumes

VOLUME II

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PART IV
ACCIDENT INSURANCE

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CHAPTER XXXI
HISTORICAL SKETCH
By SYLVESTER C. DUNHAM
INTRODUCTION BY ALFRED FOOT

It is a commonplace of human experience that every innovation designed for the improvement of the lot of mankind has attendant drawbacks which were not foreseen at the commencement of the departure.

Thus it was with the substitution of railways for the older and more primitive methods of locomotion, although the advantages to be obtained from a quicker means of transit were many and obvious.

In the forties, the modern system of block signalling was unknown, trains by day being given so many hours start before another was despatched, while at night the rear guard dropped flares which did, or did not, (frequently the latter) fulfil their purpose.

In 1848 the introduction of express trains caused great disorganization of traffic and many accidents, indeed the "Times" then, as now, the leading journal of London, declared that: "Railway accidents are almost of daily occurrence generally ending in loss of limb, often of life."

Also, it was found that the Common Law and the Fatal Accidents Act (known to this day as Lord Campbell's Act) failing to provide compensation for numerous cases in which negligence could not be proved, much pain and unalleviated suffering ensued; consequently it is no matter for surprise that, in order to mitigate the prevailing distress, insurance as applied to accidents by rail was instituted.

Thus the English race were the pioneers in accident insurance, as now understood, as they were first in the

field of life assurance, and we may put down the inception of the former as now practiced by vast commercial enterprises, with large capital funds for the purpose of inspiring confidence, to the increased facilities for travel enjoyed at that time.

It may be mentioned, in passing, that those who in 1848 were contemplating this class of business were considered madmen or fools on account of the supposed hazardous nature of the venture.

These prophets of evil were assuredly not justified by events, the modern evolution of accident and sickness insurance providing an interesting study of the growth of a big business from small beginnings, which last had their genesis in a foreseeing mind which perceived the possibilities of insuring railway travelers for a trifling sum against the dangers to which they were liable.

The Railway Passengers Assurance Company established by a special act of the British Parliament in the year 1849, was the commercial expression of this venture, and, indeed, since the days of its inception, it has been recognized as the pioneer of accident insurance.

It at once opened its campaign by issuing tickets to the traveling public, and in this connection it is interesting to note that by the end of the year a premium income of £1,421.7.1d. was secured; £4,618.2.3. in 1850; £7,352 in 1851, and £7,422.12.6. in 1852.

The first board of directors was under the chairmanship of Mr. J. D. Paul, who was shortly succeeded by Mr. James Clay, while the original secretary, Mr. Alexander Beattie, was followed by Mr. W. J. Vian. It was entirely owing to the business instincts of the latter that this confident "Forty Niner" took its next and most important step forward.

Appreciating the limitations of railway insurance, it naturally occurred to the company that it might "go one better," and provide against every kind of personal

accident; to this end a special act of Parliament was obtained on the 17th of July, 1852.

The success of this leap into the unknown exceeded anticipations, the truth of the Latin saying that "imitation is the sincerest form of flattery" receiving further corroboration in the many rival companies which eventually came into existence.

Among these may be mentioned the "Travelers' & Marine Insurance Co."; the "Marine-General Travelers' Insurance Company"; the "British Nation Insurance Co."; and the "General Accident Compensation Corporation."

In this connection it is interesting to note that the rates compiled by the "Railway Passengers" were so accurately calculated that they have been the basis of the charges made by competing concerns, not only in Great Britain, but in other parts of the world; also, their merit is proved by the fact that the originals are still the standard charges for the same benefits.

It must, of course, be understood that this does not apply to the charges made for employers' liability; indeed, the general experience of this class of business is such that the premiums, far from proving stable, exhibit a constant tendency to increase.

Nor is it only in Great Britain that the Railway Passengers Assurance Company has been the means of introducing accident insurance. It was during the early years of this company's existence that James G. Batterson of Hartford, Conn., U. S. A., visited England, where he happened to buy one of the tickets for insurance against accidents while traveling by rail. He was much impressed by the possibilities of the scheme and called at 64 Cornhill, the head office of the company; here, the information that was courteously supplied him enabled him to found on his return to the United States "The

Travelers "; this has been to his country what the parent concern has been to Great Britain.

The advantage of insuring against accidents having caught the public imagination, there seemed considerable scope for the admission of additional features.

It was no doubt realized that a man who contracted fever as the result of a bad smell or who picked up measles in a public vehicle, is just as much the victim of an accident as a man who slips on a banana skin and damages his leg.

In 1889 an Act of Parliament was passed requiring notification of certain infectious diseases to the medical officer of health, so that in a few years statistics were available which showed the proportion and age of the population attacked.

Perhaps it was in consequence of the opening suggested by the public demand for every form of insurance, together with the figures now obtainable of those assailed by specified diseases that, in 1893, a company set itself to offer for a small additional per centum on the sum insured a combination policy which provided double compensation in respect of railway accident, and insured against typhoid, typhus, scarlet fevers, and smallpox.

This development successfully " caught on " to such a degree that in four years' time, that is to say in 1897, there were 26 companies including an insurance against these infectious diseases in their policies, 12 of which added diphtheria, 20 measles, 3 Asiatic cholera; 24 of them granted an annuity in case of permanent total disablement for life, while of these companies three did not admit double benefits for railway accidents.

For all the variations introduced with their respective policies by the companies concerned, there was no denying the interest the public took in this departure, which was doubtless quickened by the recent epidemic of fashionable ailments; indeed, it was not very long before

policies insuring against accidents and every conceivable sickness were included in many prospectuses.

Even this development did not witness the termination of insurance endeavour, for the passing of the Employers' Liability Act of 1880, and the Workmen's Compensation Acts of 1897, 1900 and 1906 added enormously to the premium incomes, and outgoings, of the companies concerned, inasmuch as captains of industry were eager to shift the responsibilities imposed by these enactments to shoulders willing to undertake the burden.

Also, householders, responsible for mishaps to their servants, were equally desirous of providing against this liability, which meant further insurance business.

Nor does this complete the scope of the vast field first opened up and partly tilled by "Railway Passengers" in Early Victorian '49.

In response to the unceasing desire on the part of the public to secure itself against every kind of contingency, the companies doing accident insurance business have extended their operations and today undertake many varieties of insurance, including burglary, plate glass, fidelity guarantee, motor car, third party, lift and public liability.

Such being the case, it is no exaggeration to say that the accident offices with their vast resources and many ramifications, owe not a little of their prosperity to the brain that conceived railway ticket insurance.

Indeed, if one were metaphorically disposed, he might say that the seed planted by the originators of railway ticket insurance has grown into a mighty tree which has comfortably sheltered a multitude of grateful policyholders, who owe their protection to this forethought.

Metaphor or no metaphor, the prosperity of the mammoth accident companies can be expressed in appreciable terms, for while, as has already been stated, the premium income of the railway ticket insurance in 1849 was but

£1,421.7s.1d., that of the British accident companies concerned for 1909 (the last year for which the figures were available) reached the stupendous total of £9,896,847.

When to these figures are added those of the United States, Canadian, French, German and other accident companies, the magnitude of this species of insurance business can be appreciated.

This, in short, is the history of accident and sickness insurance and we may well venture to prophesy that when the rates for employers' liability insurance are more accurately ascertained than at present, the companies will be freed from many of the difficulties now surrounding them and will be able to continue their benevolent career to the advantage of the great public needing protection and security.

ACCIDENT INSURANCE IN THE UNITED STATES

Less than a year after the introduction of personal accident insurance in England certain companies in Massachusetts, which had been doing health insurance business for years, petitioned the legislature for permission to write accident insurance. Special acts of Massachusetts for 1850 shows that February 12, 1850, a bill having passed the legislature was duly approved by the Governor giving the Franklin Health Assurance Company, which was the successor of the Norfolk County Health Insurance Company, power "to assure to the holders of its policies, an allowance in money, for the time during which they shall be unable to transact business, or labor in their accustomed vocation, in consequence of personal injuries, resulting from accident or otherwise."

On April 23, 1850, the Haverhill Health Insurance Company, which succeeded the American Health Insurance Company, was authorized to write accident insurance in the same manner as the Franklin with the following additions to its charter:

“ The holder of any policy issued by this company shall be entitled to receive the amount that may become payable on such policy, for his own benefit and that of his family, and the same shall not be liable to attachment or execution for any debt due from him.”

Eight years later the Mutual Health Insurance Society of Pennsylvania was organized for the purpose of doing a health and accident business, but its existence was short. For a yearly premium ranging from \$2.00 to \$10.00 the members between the ages of 14 and 50 were promised an indemnity of from \$2.00 to \$10.00 a week for disablement occasioned by accident or illness, the first week excepted.

No record appears of any other company having been granted special authority to transact accident business, although the charters of several companies organized in those days in Connecticut and Massachusetts were broad enough to allow them to issue accident policies. It was not ascertained by the writer that these latter companies issued any accident policies. It is presumed, however, that they did, in a small way at least, especially in view of the need for such protection on account of the hazard of railroad travel at that time.

Doubtless the policies issued by the Franklin were the first accident *policies* ever issued. In England the first form of accident contracts were small tickets issued at railroad stations. There were no formal policies. The plan in vogue in England at that time was that by an addition of 3d to the railway fare for a first-class ticket, 2d to a second, and 1d to a third, the relatives of a person killed should secure £1,000, £500, or £200 respectively, and where the accident did not terminate fatally, liberal and immediate compensation to himself; the several sums I have mentioned being in each particular case the limit, though not necessarily the measure, of the sum to be paid.

The price for an insurance for a double, or return journey was twice the afore-mentioned sums.

A great feature of the plan was simplicity, similarly to the principle the post office had recently adopted to carry a letter irrespective of distance, so the tickets were available whatever the length of the journey, the only stipulation being that they were equal in duration with the railway ticket, and that whenever a fresh booking was necessitated on passing from one company's line to another, a fresh insurance should be taken.

Accident insurance tickets issued at railway stations have lasted until this day, and in fact are more popular than ever. One company in the United States has issued over 7,000,000 accident tickets in this country which proves to some extent the popularity of this form of insurance here.

The form of the policy issued by the Franklin follows:

" President,

Hon. Sherman Leland, Judge of Probate

Vice President,

Gen. H. A. S. Dearborn, Mayor of City of Roxbury

FRANKLIN HEALTH ASSURANCE COMPANY OF
MASSACHUSETTS

Capital \$50,000.00

Especially empowered to insure against accidents.

This policy of insurance witnesseth that, in consideration of 15 cents, paid therefor the Franklin Health Assurance Company do assure the party, whose name with the time of purchase and delivery is endorsed hereon, for the term of 24 hours, from and after the date as endorsed, and promise to pay to the said party, or to the legal representatives of the said party the sum of two hundred dollars, provided the said party shall during the continuance of this policy, receive any bodily injury in consequence of an accident by a railroad or

steamboat, and thereby be detained for the term of ten days; or if by such accident, caused by a railroad or steamboat, the said party shall be totally disabled from attending to any business for the term of two months next succeeding such accident and injury, this Company hereby agree and promise to pay, in lieu of the above named sum, the sum of four hundred dollars, payment to be made within thirty days after notice and proof are given to the company.

(Signed) STEPHEN BATES, Secretary.

Boston, July 1st, 1850."

This policy was issued at 4 o'clock p. m. October 25, 1850. It insured travelers only and not persons employed on the road.

The contracts issued by these early companies were too loosely worded, and the premiums too low for a time when there was such a reckless steam conveyance, so that, by the early part of 1858 they had all disappeared.

James G. Batterson, a prominent citizen of Hartford, Connecticut, was the real founder of the accident insurance business, on a scientific basis at least, in the United States. In 1859 while traveling in England he purchased from the station agent of the Great Western Railroad at Leamington a railway insurance ticket issued by the Railway Passengers' Assurance Co. of 3 Old Broad Street, London.

This ticket, so important in accident insurance history, required payment of £1,000 in case of accidental death while traveling on a single journey from Leamington. Mr. Batterson's destination on this particular journey was Liverpool and hence he was insured until he arrived at that place just the same as he would have been insured by the ticket to any place on any single journey he might have taken by railroad from the place where he purchased his ticket.

Mr. Batterson became much interested in the ticket and later visited the offices of The Railway Passengers' As-

insurance Company at London, where, through the courtesy of the officials of that company, he took occasion to investigate thoroughly the methods of the business. He also interviewed the great English actuary, Cornelius Walford, and discussed with him the matter of insuring against accidents, and whether it might not be possible to make a rate at which according to occupations, men could be insured for a stated amount in case of death from accident and weekly compensation for total disability. The conclusion was that it probably could be done but the proper rate must be found by experiment, particularly as conditions in America would be found very different from those prevailing in England.

Returning home, Mr. Batterson continued his investigations and finally in May, 1863, petitioned the legislature of Connecticut for an act of incorporation as a "railway passenger insurance company," under the name of The Travelers Insurance Company.

It is interesting to follow the operation of incorporation of this company. According to special acts of Connecticut 1863, the original petition was introduced in the state Senate on Wednesday morning, May 20, 1863. The following record appears in the journal:

"Petition No. 108 of James G. Batterson, *et al.*, for act of Incorporation, was introduced and referred to the Joint Standing Committee on Incorporations."

Thursday morning, May 21, 1863, the petition was received from the Senate by the House which concurred in referring it to the Joint Standing Committee on Incorporations.

This committee apparently had some question as to the advisability of granting the petition. No report was submitted until June 4th, when the following record taken from the House Journal appears:

"Thursday morning June 4, 1863. No. 108. The report of the Joint Standing Committee on Incorporations

to whom was referred the petition of Jas. G. Batterson, *et al.*, for the incorporation of a Railway Passengers' Insurance Company, recommending that the prayer of the petition be granted, and recommending the passage of an accompanying resolution submitted by the Committee, was received from the Senate, the report of the Committee being accepted, the prayer of the petition being granted, and the resolution being passed."

The question being upon the passage of the resolution submitted by the committee, the question, " Shall the resolution pass? " was put and decided in the affirmative.

So the resolution was passed, as by the committee recommended, and on further motion the House concurred with the Senate in accepting the report of the committee and granting the prayer of the petition.

" Friday morning, June 5, 1863. The report of the Joint Standing Committee on Incorporations, to whom was referred the petition of James G. Batterson and others for an act of incorporation as a Railway Passenger Insurance Company, said report being favorable to the passage of the resolution, and recommending the passage of an accompanying resolution submitted by the Committee, was received from the House, the resolution submitted by the Committee passed, the report of the Committee accepted, and the prayer of the petition being granted. Upon motion, the report together with the petition and resolution were laid upon the table.

" On motion of Mr. Mitchell, the Senate resumed the consideration of the report of the Joint Standing Committee on Incorporations, to whom was referred the petition of James G. Batterson *et al.*, for act of incorporation as a Passenger Railway Insurance Company, said report being favorable to the prayer of the petition, and recommending the passage of an accompanying resolution submitted by the Committee.

" Wednesday morning, June 10, 1863. On motion of Mr. Dart, the Senate reconsidered the vote passing the

resolution incorporating a Passenger Railway Insurance Company, together with the vote accepting the report of the Joint Standing Committee on Incorporations, by whom the resolution was submitted, and the vote granting the prayer of the petition.

“On motion, the resolution as submitted by the committee was passed, the prayer of the petition granted, and on further motion the report of the Committee was accepted.”

Governor Buckingham, the famous War Governor of Connecticut, approved the act on June 17, 1863, the eighty-seventh anniversary of the battle of Bunker Hill.

The newspapers of the day naturally did not say much of this very minor matter of the incorporation of a company. Instead the papers were very much engrossed with the momentous trouble that was then prevailing in the country.

Head liners of “Lee on his way North,” “Philadelphia in Danger,” “Pittsburg Preparing for a Siege,” etc., tell vividly what was more on the mind of the people than the casual matter of the incorporation of what Mr. Batterson’s incredulous friends believed would be a short lived business.

The purposes of the company as stated in its charter were to insure persons against the accidental loss of life, or personal injury, sustained *while traveling by railway, steamboat or other mode of conveyance.*

Little if any business was written under the original charter. June 16, 1864, the charter was amended permitting the company to insure against all kinds of accidents. March 4, 1864, James G. Batterson was elected president of the company, and the first written contract was issued to him April 1, 1864.

The business made very little headway at first, but a series of disastrous railroad and steamship accidents during 1865 and 1867 called the attention of the public

to the value of this new form of insurance. Accident insurance was soon taken up by other companies, over 70 having organized within a few years. By 1877 most of these failed, swept away by a series of great railroad and steamship calamities and the few survivors were finally absorbed by the parent company.

Benjamin Noyes, the first insurance commissioner of Connecticut, in a report made in May, 1866, says concerning accident insurance:

“ The accident insurance companies are new organizations, and thus far have met all the requirements of the laws of this State. The business is new and pursued with great vigor. Their charges are light; their risks mostly of brief duration, and they may prove a success, if the patronage is continued as it has commenced.”

In his list of foreign accident insurance companies transacting business in Connecticut he has in schedule form the following, calling most accident companies travelers insurance companies:

TRAVELERS INSURANCE COMPANIES

NAME	LOCATION	CAPITAL	TOTAL ASSETS
Travelers Insurance Company	Providence, R. I.	\$105,500.00	\$113,185.07
New York Accident Ins'ce Co.	New York, N. Y.	250,000.00	269,456.53
United States Accident Ins. Co.	Syracuse, N. Y.	200,000.00	200,000.00
National Travelers Ins. Co.	New York, N. Y.	200,000.00	200,000.00

Personal accident insurance has grown rapidly and is now promoted by companies in nearly every civilized country in the world. After England and the United States, accident companies were established in Germany and Switzerland and then a little later in Austria and France; in Italy and Spain accident insurance companies are of very recent growth.

In the United States there are approximately 60 companies transacting personal accident insurance, and the business is being taken up rapidly by the surety and

casualty companies and foreign fire insurance companies through subsidiary companies, which have hitherto transacted this form of casualty business.

The growth of cities, the immense development of industries and the changes in method of transportation have all been great contributing forces in bringing accident insurance into prominence.

That accident insurance occupies a field in which necessity for such protection exists is shown by the fact that disabling injuries are sustained in about one accident policy to every nine issued. One accident insurance company has issued from the time of its incorporation nearly 5,000,000 policies of accident insurance. The number of claims paid to injured persons or their families in case of fatal results was over 560,000, and to these beneficiaries has been distributed nearly \$36,000,000. In many cases the policyholder was dependent upon his salary and wages for the support of his family.

In 1911 over \$20,000,000 was received in personal accident premiums by the companies now engaged in this business in the United States. The premium received upon the first year's business of The Travelers Insurance Company from April 1, 1864, to April 1, 1865, were \$32,148. In 1910 the company paid over 14,400 personal accident claims with benefits of over \$1,553,000.

The ratio of fatal accidents to the whole number of injuries sustained is about 1.30 per cent., but the amount paid for death claims amount to from 30 per cent. to 40 per cent. of total losses. The average duration of disability is about 22 days. The ratio of accidents sustained by people who work in the occupations for which they are insured is approximately 67 per cent. of all accidents for which claims have been paid.

Leaving out of account the hazards of occupations, accidents have happened under policies without reference to the employment of the insured in the following r

At Home.....	25.9%
Pedestrians.....	18.2%
Automobiles.....	11.1%
Recreation.....	11.0%
Horses and Vehicles.....	9.9%
Street Car Travel.....	7.2%
Railway Travel.....	4.3%
Bicycles.....	1.2%
Steamship Travel.....	1.0%
Miscellaneous.....	10.2%
	100.0%

A significant conclusion from these statistics is that the hazard of railway travel, to provide for which accident insurance was first contrived, has become an insignificant factor in the business. Apparently there is four times greater exposure to danger in walking than in traveling by railway. The exposure to life and limb at home seems to be greater than railroad, street car and steamship travel, automobiles and bicycles combined.

But this comparison may be misleading without an explanation. That the greater ratio of injuries occurs in home employments is to be accounted for by the fact that while the individual hazard is less a vastly greater number of persons are constantly exposed to some danger in the quiet than in the strenuous life.

Old causes of accident decrease, new causes are constantly appearing, as the following makes evident.

The rise and decline of the bicycle is graphically illustrated by accident statistics. In 1896 one company paid 812 claims for \$44,584 for bicycle accidents. In 1910 the bicycle hazard had so far declined that only 117 claims were paid amounting to \$11,223.69.

But as bicycle accidents declined accidents due to the introduction of automobiles appeared and have immensely increased. In 1896 automobile accidents were unknown. In 1910 the same company paid for automobile accidents claims amounting to \$185,330.60.

Rates, contracts and practices have undergone many changes since the early days of accident insurance when

the business was experimental and presented many problems that have since been solved by experience.

During the first five or ten years the greater part of the business consisted of insurance against the hazards of travel, for which tickets were sold, protecting the holder for from twenty-four hours to thirty days, but gradually the great volume of accident insurance has been transferred to an annual basis and more than 95 per cent. of all such insurance is effected by means of contracts for one year, furnishing indemnity for death, disablement and dismemberment from all accidental causes. The basis of such contracts is \$1,000 for fatal injuries and \$5 per week for disability. Insurance is issued in that ratio in amounts up to \$100,000. Risks are classified according to the hazard of occupation, merchants, bankers and professional men constituting the preferred class and railway employees the most hazardous. Premiums are graded accordingly. There has been no material change in this respect from the beginning.

Formerly contracts were issued providing that no recovery should be had if injuries were caused by misconduct, or if inflicted by intention; if there were no visible mark upon the body; if contributed to in any degree by disease, or by voluntary exposure to danger. The hazards against which the companies protected themselves by such conditions have since become better understood by the adjudication of the courts and the company's exercise of selection of risks by accepting only men in good health and of unquestioned moral and material responsibility, so that the restrictions which formerly obtained have become to a large degree unnecessary. Policies are liberal in their terms and are so simple and explicit as to furnish little ground for controversy, and misunderstandings between the company and the insured are extremely rare.

Insurance for loss of time for disabling injuries is re-

garded as an indemnity against pecuniary loss and for that reason insurance is not issued to cover more than two-thirds of the value of the policyholder's time, measured by the compensation he receives from his employment.

The death element of accident insurance is a limited form of life insurance and its amount is not controlled to so great an extent by the earnings of the insured, that being designed for the protection of the family in case of death. For that reason many policyholders insure against death only.

Life insurance statistics show that ninety-three deaths out of every one thousand are caused by violence, so that insurance against death from fatal injuries is about 9.3 per cent. of full life insurance.

Within twenty years insurances against dismemberment and loss of sight have been introduced into the contracts of most companies, whereby indemnity is paid equal to one-fourth the principal sum for the loss of a hand or foot and from that up to the full amount for total permanent disability resulting from accidental injuries.

Reserves are required by law as in other forms of annual insurance. A liability is contracted by an insurance company whenever it issues a policy and the premium being paid annually in advance, such liabilities are outstanding for the unexpired term all the way from a day to a year, so that the mean outstanding at any given time is one-half the entire volume. A proper reserve or sinking fund against such liability is therefore one-half the net outstanding premiums and that is the reserve established by the laws of most of the states.

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CHAPTER XXXII

THE POLICY

BY F. LEROY TEMPLEMAN

IN probably no other branch of insurance has the genius of invention and the faculty of imagination played more important parts than in the development of the accident policy. In its original form it was merely designed to cover the hazards of travel and the contract itself was brief and contained but few provisions and conditions. The demands for broader protection against the physical effects of accidents soon became apparent; it was found that not only was the traveler subject to death and disability through accidental injuries, but that in the ordinary walks of life, dangers beset both life and limb, and a man in the pursuit of his calling—whether at office, shop or store—was in as much need of the protection afforded by an accident policy as the more limited class of individuals whose employment constantly exposed them to the hazards of travel; in order to meet this demand for complete accident protection the provisions of the policy were enlarged to cover all contingencies of an accidental nature, except the few which the companies, with their then limited experience, thought could not be profitably insured against.

With the object of complete protection continually in view the policy has gone through successive stages of development; in some cases changes have become necessary by reason of judicial decisions giving to the policy constructions that were not intended by its original framers, but the exigencies of competition have been responsible for the majority of the additions that have been made to the original policy until now we have a policy containing many features that had no place in the

contract as originally constructed but which all directly benefit the policyholder and tend to correspondingly decrease the underwriting profits of the companies writing this form of insurance.

Among these features might be mentioned accumulations, surgeon's fees for certain injuries, reimbursement for hospital expenses, beneficiary insurance, optional indemnity whereby the insured is entitled to the payment of a fixed sum for certain injuries, and double benefits for specified accidents.

There is such a wide diversity in the form in which accident policies are drawn that reference can only be made to it in a general way. Some uniformity in that direction has been obtained through the so-called Standard Provision Laws that have been enacted in several states. For instance, it is now required that on the front page of the policy shall appear, in type not smaller than 18 point, a brief description of the scope of the insurance and this description is required to appear also on the filing back of the policy. The opening, or insuring clause of the policy, follows and contains the general terms of the insurance. The policy undertakes to insure only against loss of life and disability effected through those contingencies that are commonly regarded as accidental in their origin. Hence not merely must the cause of the loss be accidental but the means producing the injury must be accidental as well; in other words, it is necessary that there occur something of an accidental or unforeseen nature in the act from which the injury results. If an injury results from means voluntarily employed, the result, although unexpected, may not be accidental within the meaning of the insuring clause of an accident policy unless something of an accidental nature occurs in the act, or series of acts, immediately preceding the injury and causing it; consequently the insuring clause in its original phraseology required that

the injury be effected through external, violent and accidental means. This phraseology was generally used until several years ago when some of the companies adopted the practice of eliminating the words "external" and "violent" in describing the means through which an injury must be incurred, thus making recovery conditional only on the means being accidental. The underwriter, therefore, has the choice of two phrases with which to designate the basis of his company's liability, but since the only advantage that can accrue from the elimination of the words referred to, is brevity, it is questionable if the end justifies the casting aside of the precedents set by the courts for years in interpreting and construing the phraseology originally employed, which made recovery conditional on the injury being sustained through external and violent, as well as accidental means, particularly when the trend of judicial opinion seems to indicate that a broader interpretation will be placed on the clause requiring merely that the means be accidental.

Disease so often complicates the physical effects of an accident that it is necessary to eliminate in express terms those cases in which it is a factor in contributing to the injury or in prolonging disability. This is done by the use of various terms, the most acceptable probably being the qualification that the injury shall result from accidental means, independently and exclusive of all other causes. A disease may result solely from an accident and the policy would cover loss of life, limb or time resulting from such a cause; for instance, an accident may produce peritonitis, septicæmia or blood poisoning, tetanus or hydrophobia, without any pre-existing tendency to those diseases; but if the accident is caused by a disease, as in the case of an injury following a stroke of apoplexy, or if the injury merely accelerates the physical effects of an existing disease, there can be no liability under an accident policy.

A copy of the application for the insurance, or of the schedule of warranties, should be in express terms made a part of the policy, and it is desirable, and in fact required by the insurance departments of several of the states to which have been delegated the right to approve policy forms, to insert in the insuring clause, or elsewhere in the policy, a brief statement of the insured's occupation and the duties thereof, since the premium rate is based thereon, as well as the company's right to pro-rate the indemnity in the event of an injury sustained while following some other more hazardous occupation. The benefits provided by the policy follow the insuring clause and they should be stated in language that is clear, concise and unambiguous; the conditions should be likewise worded. Many of the states require that the conditions be given the same prominence as the benefits provided by the insurance, and the type used must not be smaller than 10 point or long primer.

The policy provides for the payment of a certain amount for loss of life, which is called the Principal Sum, and proportionate amounts are allowed for the loss, by actual severance, of limb or limbs, and for the total and irrecoverable loss of the sight of both eyes or of one eye. These losses must result within ninety days of the accident or within a longer period if the disability is immediate and total from the date of the accident. Experience has shown that if the loss is remote in period of time from the accident it will probably be contributed to by disease, or by causes other than accidental and, therefore, not contemplated being covered by the policy, and it is to afford the company protection against liability for such complicated cases that the time within which the loss must be incurred is thus limited and qualified. In addition to the specific sum, weekly indemnity is allowed for the disability continuing from the date of the accident to the date of death, dismemberment or loss of sight; a few



of the companies also allow the return of all premiums paid for the insurance in the event of accidental death.

Since the principal purpose of accident insurance is the protection afforded against loss of income resulting from accident, the weekly indemnity feature is of primary importance. By virtue of it a certain sum is payable for the period immediately following the accident during which the insured is wholly disabled from the performance of any and all of the duties of his occupation or employment and a proportionate amount of that sum, in some cases fixed, in others, dependent upon the extent of the disability, is allowed for the period during which the insured is able to attend to only a part of his duties. The payment for total disability ranges, under different policies, from two years to an unlimited period, and for partial from twenty-six weeks to one year. Weekly indemnity is usually payable in instalments in order that the insured may secure the benefit of his insurance during the time of greatest need; the instalment periods range from four weeks to three months and payment is always conditional upon the submission of satisfactory proofs of disability covering the period of time for which indemnity is claimed.

A feature of most policies is the Elective, or Optional Indemnities under which the insured is entitled to receive certain fixed sums at his option in lieu of weekly indemnity for certain stipulated injuries, such as the loss of fingers or toes, fractures and dislocations. These fixed sums are based on the amount of weekly indemnity that would be allowed for the disability resulting from the average injury in "Preferred" occupations, and this feature affords a ready and prompt means of adjusting claims for the injuries stipulated, and permits the insured to receive the payment of indemnity at once without waiting for the termination of his disability or the expiration of the instalment periods. Notice of the

election of optional indemnity is required within ten days to two weeks; otherwise the purpose of the provision would be defeated.

Probably on account of the wide publicity given railroad and steamship disasters, travel by rail and water is commonly regarded as being the most prolific source of accidents to life and limb, and in order to enhance the value of accident insurance and to save the individual contemplating a journey, the trouble of increasing his insurance to fully protect him against the well recognized hazards of traveling, the companies early adopted the practice of providing for the payment of double the principal sum and weekly indemnity for accidents of travel. This clause was originally restricted to steam railroad and street cars and steamships, but as it is generally used now it covers all injuries sustained in or on any public conveyance provided for passenger service by a common carrier; and it has been extended to also include not only the portion of such conveyances intended for the occupancy of passengers, but the platform, steps and running board thereof; nor are injuries incurred while alighting from or boarding such conveyances excepted. This clause is so comprehensive that considerable discussion has been provoked as to the extent of its coverage in various cases, but the limits of this article are too narrow to permit any elaboration of the subject here. It might be said, however, that the definition of a common carrier is so broad that the clause will probably be held to cover all classes of conveyances provided for passenger service which are intended for the use of the public indiscriminately. It is also sometimes difficult to determine just how far this clause is operative in cases in which an injury is incurred in boarding or alighting from conveyances. Whilst it is hard to state any general proposition governing such cases, it would seem proper to allow double indemnity in cases in which the accident or cause of the



injury happens while the insured is still upon the conveyance or its steps, but if in alighting, the insured should slip on the ground or incur an injury by reason of its conformation, or something upon it, even though he has not detached himself entirely from the conveyance, or if in boarding a foothold has not been secured, single indemnity should be paid. The incorporation in this clause of additional contingencies for which double indemnity is allowed has been the favorite means resorted to by the companies for the purposes of competition, and double indemnity is now allowed for various accidents that have no connection with traveling. Some policies provide for increased benefits for injuries sustained in consequence of the burning of a building, for injuries received in elevator accidents, by the explosion of a steam boiler, by lightning, by the collapse of a building and by assaults for the purpose of robbery. This clause also applies to the elective benefit feature.

Accident policies, unlike life contracts, are only issued for periods of three, six months or one year, and very often are taken out by the individual to protect him during some particular journey or other supposed hazardous undertaking. In order that the insured might have some inducement for the continuance of the insurance, and with the object of securing the successive renewals for the company originally writing the risk, it was found desirable by some of the companies to provide for annual increases, or accumulations, of from 5 per cent. to 10 per cent. to the principal sum until 50 per cent. is thus added to the benefits allowed for death, dismemberment and loss of sight. This feature is contained in the policies of nearly all the companies and under some contracts, by the payment of an additional premium, this accumulative provision is extended to increase the weekly indemnity as well as the principal sum.

The necessity for increased indemnity for serious in-

juries requiring surgical attention being apparent, accident policies provide for certain stipulated amounts for the reduction of fractures and dislocations, the amputation of limbs, for gunshot wounds and for abdominal operations necessitated by accidental injuries and performed within ninety days of the date of accident, these sums being payable in addition to weekly indemnity and dismemberment benefits. The amounts are usually based on a policy for \$5,000 and proportionate sums are allowed under smaller or larger contracts, and in some cases they are sufficiently large to cover the cost of subsequent medical attention, as well as the surgeon's fee for the actual operation. For minor injuries which do not result in disability, but which require medical or surgical treatment, the cost of such treatment is allowed not to exceed the equivalent of one week's indemnity. Thus if an injury results in any financial loss to the assured, irrespective of disability, he is indemnified to the extent of the amount insured. If an injury necessitates confinement to a hospital, additional compensation is allowed, usually to the extent of one-half of the sum stipulated as weekly indemnity for a certain number of weeks ranging from ten to fifteen weeks, provided no claim is made for surgical attention.

An original feature of many forms of accident policies is the granting of insurance for certain specified accidents and injuries sustained by the party designated in the policy as the beneficiary. This feature provides that if one person is named the beneficiary in the policy, and shall be between the ages of eighteen and sixty years, and is in sound mental and physical condition, such beneficiary shall also be insured for death, dismemberment and loss of sight resulting from injuries sustained while he or she may be riding in a public conveyance provided by a common carrier for passenger service; while in a passenger elevator, or in consequence of the burning of

a building while the beneficiary is therein. Under the policies of some of the companies this feature is extended to also cover injuries sustained by the beneficiary from lightning, in consequence of the collapse of the walls of a building, or as the result of boiler explosions. It is further provided in most cases that a certain percentage of the indemnity stipulated in the schedules of injuries and of operations is payable for the loss of fingers and toes, fractures and dislocations sustained by the beneficiary as the result of the limited number of accidents described in this clause.

The beneficiary clause, as this feature is termed, has provoked much discussion among underwriters and the insurance departments of many of the states. As an attractive soliciting feature its value cannot be denied, but it is questionable if as an underwriting proposition the principle of beneficiary insurance is sound, since it undertakes to insure an individual who is incompletely described, and the company is without sufficient information regarding the individual from which to determine the advisability of carrying the risk. The insurance departments of several states including New York and Massachusetts have objected to and refused to sanction the issuance of one policy to cover two individuals—the insured and the beneficiary—and in those states, for an additional premium, a separate contract is issued under which the beneficiary is insured.

Accident insurance is primarily a limited form of life insurance, with the loss of time feature added, and on account of its limited scope, the contract contains agreements and conditions which impose certain obligations on the part of the company and the insured. The performance of those conditions that are required of the insured is precedent to his right to recover, and any failure on his part to comply invalidates his claim. It is of primary importance that the company receive notification

of any injury for which a claim is to be made within a reasonable time after the injury is sustained, and not after the termination of the disability, or the death of the insured. The time within which notification should be given is fixed by law in several of the states, ranging from ten to ninety days. Under the provision of the standard policy law notification within twenty days of an injury is required unless it can be shown that such notification is not reasonably possible in any given case.

All claimants, unfortunately, are not inclined to treat the company fairly in claiming the amount of indemnity that is due them for their disability, but are disposed to unduly prolong the period, particularly when the amount of the insurance represents, or nearly covers, the amount of their weekly earnings; in other cases disease or neglect may be a factor in prolonging the disability, and it then becomes necessary for the company, in order to properly protect its interests, to engage a physician to examine the claimant for the purpose of determining the extent and probable duration of the disability and if causes other than those flowing directly from the accident contribute to it; an investigation also is sometimes required to determine the exact facts surrounding the accident as any change in the narrative of the event may materially increase the company's liability. Obviously, if notification is delayed beyond a reasonable time, or after the evidence of the injury has disappeared, a medical examination can be of no assistance to the company in determining the extent of its liability, nor can a satisfactory investigation be made to ascertain the correct facts. Supplementing this notification clause the company, in express terms, is given the right to have the insured examined by its medical representative in such manner and as often as it may require. It having been held that this did not give the company the right to perform an autopsy in case of death, all policies now give the com-

pany the privilege of performing an autopsy when it is deemed necessary, and the right to be represented thereat if a post-mortem examination is made by other interests. This right to an autopsy must be judiciously exercised on account of the strong sentiment against the mutilation of a body after death, but in many instances it is the only means of ascertaining the exact cause of death, particularly in those cases in which the death does not immediately follow the accident, thus permitting the intervention of other causes.

In order to insure prompt disposition of a claim and to enable the company to properly investigate it, should the amount claimed appear to be excessive, accident policies require the submission of affirmative proofs of death or disability within a certain period from the date of death or termination of disability, generally limited to sixty days. It is also required that legal proceedings for recovery under a policy must be brought within a certain time—this period is usually limited to a year, but in some states (Massachusetts, Texas and North Dakota) it is extended to two years. Many policies limit the time to one year and stipulate that if the provision of the state in which the insured resides differs from the policy requirements for filing proof of claim and for bringing suit, the statutory provisions shall supersede the policy conditions. It might be added that on account of the many circumstances under which the policy requirement limiting the time for the filing of proofs may be waived by the company or its representatives, that condition is difficult to enforce, but the company's right to require suit to be brought within a certain time has been generally upheld, and failure to comply with that requirement forfeits the insured's right to recover.

A change of occupation does not vitiate the policy but since the rate for accident insurance is based upon the occupation of the insured, it is important that the policy

should contain some clause whereby the company is given the right to pro-rate or proportionately reduce the amount of indemnity allowed for injuries sustained while the insured may be engaged in the duties of a more hazardous occupation. The payment of indemnity is also restricted to the limits prescribed by the company for the more hazardous occupation. The question of what constitutes a change of occupation has been the subject of considerable litigation and the weight of the authorities holds that a single act, or even series of acts, in which the insured may be only temporarily and incidentally engaged pertaining to a more hazardous occupation, does not give the company the right to pro-rate but there must be a more substantial and permanent change of occupation from that in which the insurance is issued and upon which the premium is based. Claims for injuries sustained by the insured while engaged in sports for recreation, or while at home, cannot be pro-rated. The policy and application therefor require a complete statement of the insured's duties and many questions arising under this clause are due to the failure of the insured, or the agent, to properly and completely state all the duties required of the former in his occupation. If the occupation is fully stated and the description of the occupation given in the manual of rates used, there will be little occasion for the application of this clause unless the insured, after the date of his policy, abandons his old occupation and engages in a more hazardous one. The indemnity allowed for the more hazardous occupation is figured by ascertaining from the manual the amount of insurance that could be purchased in that occupation for the premium paid.

The rates for accident insurance are also based upon the risk of injury incurred by the average individual in sound mental and physical condition, and when through any causes the risk becomes abnormal, or, as it is termed

in life insurance, a sub-standard one, it becomes necessary for the company to relieve itself of its liability to that individual by cancellation, since it would not be proper to charge those policyholders who are physically and mentally sound a high rate of premium to compensate the company for carrying the increased risk of those individuals who are not so well favored in the possession of health or of their mental faculties. The right of cancellation is given the company in express terms and it is sufficient if notice of cancellation is delivered to the insured or mailed to him at the address given in the application for the insurance, or at the last address as shown by the company's records with check for the unearned portion of the premium. A few of the states require that five days' notice of cancellation be given but in the majority cancellation is effective from the date of the delivery or receipt of the notice. The exercise of this privilege is without prejudice to any claim for injury sustained prior to the date of cancellation, and the company cannot relieve itself of liability for any subsequent disability arising from such an injury. Except in one state, Wisconsin, the insured is not given the same right to cancel his policy and to demand the unearned portion of premium.

Speculative claims under accident policies have long been the source of much expense to the companies and in order to minimize their number and to prevent the insured recovering indemnity in excess of his income a clause is inserted in some policies providing that no recovery of indemnity can be made in excess of the average weekly earnings of the claimant and for the return of the premium paid for such excess insurance; likewise, if the insured carry policies in other companies providing for an aggregate amount of indemnity in excess of his earnings, recovery can only be had from each company of a proportion of the total amount of the insurance.

Other companies, in order that the amount carried on any one risk shall not exceed a certain limit, provide that no claim shall be valid in excess of a stipulated amount under the single indemnity clause which is necessarily increased to a larger amount by the operation of the double indemnity clause and the accumulative provision. Ordinarily, there are no restrictions as to travel or residence contained in accident policies, but most of the companies will not grant insurance to individuals who reside outside of the jurisdiction of any of their offices or agencies, since it would be difficult to adjust possible claims under such risks.

The laws of several of the states require other agreements in accident contracts in addition to those which have been already enumerated. The states that have adopted the standard provision laws require that all contracts shall specify that the policy, with a copy of the application, and any endorsements or riders attached thereto, shall constitute the entire contract, with the exception of the manual of rates, which must be filed with the insurance department. The policy must further provide that no statement made by the insured, nor any section of the company's charter or by-laws, not incorporated in the contract shall be used in defense of any claim. A stipulated time, not to exceed sixty days, must be stated within which any valid claim shall be paid and provision is also made for the reinstatement of the insurance by the acceptance of any past due premium by an authorized agent of the company.

Since no medical examination is required for accident insurance, the company's acceptance or rejection of a risk is determined solely from the statements submitted by the applicant when the insurance is applied for, which are contained either in his signed application or in a schedule of warranties which is incorporated in the policy and made a part of the contract. By accepting the policy

the insured warrants the truth of these representations and if found to be untrue, the policy is void and the premium is returned. The policy should, therefore, contain an exact copy of the application, or the schedule of warranties, when the insurance is based upon representations made by the insured. In most of the states, in order that an insured may not be deprived of the protection for which he has paid, through some trivial misstatement, it must be shown that the warranty pertains to some matter material to the acceptance or rejection of the risk before a breach can be successfully pleaded in defense of a claim. The payment of a prior claim, or claims, or the statement of the insured's age, height or weight may or may not be a material warranty since such representation may not affect the rate charged for the insurance, nor the company's acceptance of the risk, but the existence of other similar insurance, the rejection or cancellation of prior insurance, etc., are material matters which directly influence the company to accept or reject the risk and any breach of such warranties constitutes a valid defense of any claim.

Another feature of many accident policies is the identification clause under which the company undertakes, in case the insured is physically unable on account of injuries to communicate with relatives or friends, to transmit to such persons as may be designated, any information respecting him and to defray the expense, within a certain amount, necessary to place him in their care.

The foregoing describes the principal features found in most of the so-called combination accident policies, the word "combination" being used to distinguish the policies which provide for double benefits for travel and other accidents from those contracts which contain no doubling clause and which are termed straight accident policies. The payment of weekly indemnity for total

disability is usually limited under the straight forms to two years and 40 per cent. of full indemnity is allowed for partial disability, and on account of the reduced number of benefits and the less liberal limits for the payment of weekly indemnity, are issued at a lower premium than the combination form. The issuance of the combination policy is restricted to occupations which do not involve the performance of any manual labor, and on account of the liberal limits provided under this form it has been found undesirable to issue it to persons engaged in more hazardous vocations.

A policy which is now much in favor is the death and dismemberment accident, known in some companies as the life and limb form, which does not provide for the payment of disability benefits but only covers the specific losses of life, limb or sight. The premium for this policy is, of course, much less than for either the combination or straight accident policy and it is particularly adapted to the class of financially favored individuals whose incomes are not affected by disabling injuries but who desire to create an insurance fund for the use of their dependents in the event of accidental death, or for their own benefit in case of dismemberment or loss of sight. Other policy forms, known as disability policies, provide indemnity for sickness as well as for accidental injuries; others provide for indemnity for a limited number of diseases. These policies are, of course, issued in consideration of an additional premium and a description of them is not within the scope of this article.

It can be seen from what has been said that an accident policy affords protection in its broadest sense against the losses incurred through accidental injuries. Reimbursement is provided for the cost of surgical and hospital treatment, as well as for loss of time, and it is difficult to conceive how the policy can be made more liberal or more satisfactory to the insuring public and at the

same time allow the company a fair and reasonable margin of profit for undertaking the risk. Every policy of insurance, to be successful, must contain two essentials; i. e., it must cover a well recognized hazard and it must provide full and complete protection against loss incurred thereby, and judged by these elements an accident policy should be a contract of wide demand and popularity.

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CHAPTER XXXIII

PREMIUM RATES

By EDSON S. LOTT

PREMIUM rates for accident insurance are probably the least scientific of all insurance rates. Because of that fact, the reasons underlying their construction are hard to formulate and present. They are more the result of actual year-to-year experience under the guidance of the general law of average, than of mathematical calculations based upon a mass of statistical information previously acquired. This is not saying that the scientific method is wholly absent; it is not an admission that accident insurance is completely devoid of the scientific element; but it would be extremely difficult, if not impossible, for any one to reduce an accident rate to its component parts, and to furnish satisfactory reasons for the existence of each part. In this particular the manner of construction of these rates is not comparable with that of those made for fire insurance which, with the exception of the arbitrary "basis rate," are made up from a schedule on the one side of charges for hazards and on the other of credits for their amelioration. The balance between these constitutes the rate. Such a bill of particulars can be understood by any one and, assuming that the items composing it have their origin in actual fact, are convincing. This process of segregation of hazards cannot yet be undertaken in accident insurance for the purpose of demonstrating how its premium charges are determined.

As a matter of fact, the rating in this business seems to revolve around a unit or standard composed of a certain kind of policy contract upon which a premium of \$25 a year has been placed—the benefits and privileges decreasing with a lower premium, and increasing with a

higher one. This feature of the subject will be more fully discussed later on. It may for the present be profitable to digress sufficiently from the main subject to briefly trace in broad lines the beginnings of accident insurance, especially in the United States.

Individual man has been slow in recognizing the economic value of his time. He has but recently set about the task of indemnifying himself against its loss. Accident insurance is barely two generations old in this country and consequently it has not the experience accumulated upon which to base its operations that is possessed by marine, fire and life insurance. For obvious reasons its conduct can never hope for the accuracy of direction characteristic of life insurance, but it will eventually surpass fire insurance in that particular. Like fire insurance its success at present rests largely in the quality of its "underwriting"—an element composed largely of professional instinct helped out by "rates and classifications." Of course, there are many other factors, notably those concerning company management and operation, that are quite as essential.

As set forth in the chapter on the History of Accident Insurance, the first accident policies, in the modern sense, were issued against injury from accidents of railway travel. The contracts of that day did not contemplate the general hazards of everyday life. Travel then by steam railway was regarded as a "fearsome and terrible" undertaking. The general mind associated insurance with unusual perils. What more natural, then, that the idea of a money indemnity against injury incident to such journeying should present itself. These first experiments at insuring against accident were made without regard to the resulting pecuniary loss. Rather was it the injury itself. In other words, the undertaking was not clear of speculation on the part of insured and insurer. This being so, it is to be presumed that the

“ science ” of underwriting then played a very inconsiderable part in the determination of the premium. The earliest contracts were, probably, made somewhat after the manner that then, as now, obtains at “ Lloyds ” in underwriting unusual risks. Premiums varied greatly and were determined by the willingness of the insured and insurer to gamble upon an unknown hazard.

The Railway Passengers Assurance Corporation of England was the first incorporated company (1848) to write this form of insurance. It had comparatively no data upon which to base its premium charges. It was the pioneer in an unexplored field. It was totally ignorant of the risk probabilities it was assuming and of the relations which its premium charges bore to them.

We find the functions broadened in the policy of The Accidental Death Insurance Company, also an English institution, organized in 1850. This company extended its insurance to cover accidents arising from all sources; and it not only insured against accidental death but also provided “ compensation for bodily injuries occurring to any person or persons from any accidental or violent cause or causes not occasioning death.” Here we have the first recognition of the value of a man’s *time* for loss *resulting* from injury, the only foundation upon which the enterprise can safely rest. A serious attempt was made by this corporation to evolve a “ table of accurate and justifiable rates.” These rates were the result of deductions from the mortality tables used by the life companies, combined with the statistics possessed by numerous fraternal organizations. While the rates so deduced were reasonably sound as applied to the *average* risk, yet as regards their *classification* and the comparative hazards there was a most lamentable dearth of necessary knowledge. In fact, the principle of classification and consequent differential rates were absolutely ignored, although it was vaguely recognized that individuals of

various occupations were exposed to varying degrees of hazard. Lacking sufficient data from which to classify these occupations, they chose the impracticable, though specious, expedient of considering them as a whole.

During the next few years, several new English companies were organized, some to grant insurance on risks in general, others confining their activities to those incident to certain occupations. Again the need of proper classification became the stumbling-block. Each company formulated, in a crude way, its own rates and classifications with the result that wide variations existed among them. It must be remembered that, in spite of the broadening of policy forms which had taken place, the hazard of railway travel was still the dominant consideration both to the insurer and the insured.

By 1857 there had been accumulated a sufficient body of experience to warrant the combined companies to undertake a more intelligent readjustment and equalization of rates and classifications. But it had become apparent that the policies from which this experience was drawn were deficient in many respects; that they did not afford the companies necessary protection in many ways. The framers of these early contracts did not anticipate the diverse ways in which the meaning and intent of their policies might be construed, nor the necessity for even the most fundamental safeguards. As the new rates were based upon experience secured from the use of these forms, it was clear either that allowances should be made for the probable effect revision would have upon these rates (as applied to various occupations) or that a yet more accurate and comprehensive classification should be made. The latter course was adopted and finally a most thorough system of classification was devised.

At this period accident insurance was introduced into the United States. The Travelers Insurance Company of Hartford was founded in 1863, through the instru-

mentality of James G. Batterson. He became interested in the business as it was being conducted in Great Britain and was impressed with the possibilities which prevailed in America for this form of insurance.

Mr. Batterson realized that the two countries differed widely in their industrial and transportation conditions and that the economic conditions governing in Great Britain were totally unlike those existing in the United States. He practically reproduced the policy used in England and made no changes in the rates, but he completely revised the classification of risks and, by this means, essayed to make his underwriting conform in practice, as well as in theory, to American conditions.

After the advent of The Travelers many small organizations sprang into being. Most of these lived only a short time; a few abandoned the field and took up other forms of insurance; others died a lingering death. While endeavoring to follow, in a general way, the underwriting practices of The Travelers, they, in addition, sought to take the initiative by formulating their own classification and rates. Chaos existed among the struggling companies of this country quite in the same manner as it had previously among their English predecessors.

Later, other organizations, built on better and more lasting foundations, appeared. Rates became more nearly uniform; there was less variation in classifications. As experience increased and reliable statistics were accumulated, there was a noticeable trend toward a uniform standard. While the companies did not to any extent voluntarily share the benefits to be derived from access to combined experience, yet a tendency toward uniformity of underwriting practice made itself manifest.

The International Association of Accident Underwriters was formed in 1891. Although, as the title would indicate, this association was founded with the idea of the possible ultimate inclusion of worldwide accident in-

surance interests, its chief object was the promotion of harmony and good-will among American companies. At first its membership consisted almost entirely of mutual and fraternal associations and, from inception, it proved a source of much benefit to them in affording a solution of some of their actuarial problems. Along about 1902 the association had sufficiently prospered to attract the co-operation of several of the larger stock companies, and since then it has grown greatly in membership and efficiency. Its membership now includes practically all of the successful accident insurance companies operating in the United States and Canada. The association had, from time to time, taken up the question of rates and classifications, but such subjects were usually considered, not as a whole, but severally; for instance, a specific occupation would be found, by consensus of opinion, to be erroneously classified. While such knowledge would be acted upon by many of the companies in their subsequent underwriting practice, yet such changes were merely in advisory form and did not secure general adoption. During the past decade the unparalleled industrial growth of the country, together with the rapidly widening scope of accident insurance, resulted in many demands upon the underwriter which past experience afforded him little aid in meeting. It also became apparent that the yearly increasing volume of business was having the effect of demonstrating the many inaccuracies and inconsistencies that existed in rates and classifications. It was only natural, then, that the companies should look to the association as a clearing-house, through which they might pass their individual experience and receive in return the experience of their competitors. Accordingly, a committee was appointed by the association in 1904 to receive and tabulate the experience of all the companies.

As a result of their labors, a standard manual of rates (classifications) was issued in 1906. At first this manual

was tentatively adopted by all the members but, through stress of competition and the difficulty of forcing new conditions upon the agency force, it gradually lost official sanction with some companies. Many companies persisted in its use, however, and a mild reaction in favor of the manual set in later when it became apparent that good underwriting judgment dictated that it supersede the manuals theretofore employed. Some companies now, perhaps always will, accept the verdict of their own, in preference to the combined experience; and wherever that principle dominates, an influence operates against the successful inauguration of uniform practices. Strong, old and well-established companies solidly intrenched in certain fields, hesitate or decline to yield advantages won by their own methods. Accident insurance is not singular in having a situation of this kind to face. It is an inevitable concomitant of all development.

We may safely assume that accident insurance is passing from the formative to the semi-scientific stage. The present tendency is strongly in the direction of a greater development of its mathematical side. Its statistics are more industriously gathered and intelligently applied. Companies which heretofore gave little attention to this side of their business are now maintaining efficient, and in some cases, elaborate statistical departments. Others which formerly withheld their co-operation in the efforts to build up a combined experience are now making valuable contributions to it. While competition will never slacken, it will not have the deadening effect of destroying appreciation for the eternal facts which are to be dug out of the statistics, the proper recognition and use of which are essential to corporate safety.

So much for an outline of the vicissitudes through which the underwriters of yesterday and today have passed. Let us now briefly consider the questions of rates and classifications, noting the essential factors

which enter into the determination of comparative hazards; explaining and accounting for, not only the less obvious distinctions in classification, but also the seeming inconsistencies and discriminations.

In order that the comparative hazard, as expressed in premium charge, of the various classes of risks may be observed by those unfamiliar with accident insurance, it will be noted that the average policy provides the following indemnities:

For loss of life, or both feet, or both hands, or one hand and one foot, or both eyes, \$5,000; for loss of one foot or one hand, \$2,500; for loss of one eye, \$1,666; for total loss of time \$25 per week—not exceeding 200 consecutive weeks; for partial loss of time, \$12.50 per week—not exceeding twenty-six consecutive weeks.

The lowest premium for all this is \$20 (or \$25 when indemnities are doubled for traveling accidents) per year, and the highest premium (exclusive of a very few very dangerous occupations) is \$150 per year.

Between these extremes will be found a graduated scale of premium charges commensurate with the exposure incident to the various classes. These classes are variously designated by different companies. We find the terms "special," "preferred," "ordinary," etc. Again "class 1," "class 2," etc., to which may be added the titles original with and peculiar to the companies employing them.

As we have seen, to the hazard of railway travel was due the origin of accident insurance. The association of this form of indemnity with this particular hazard, persisted long after policies had been broadened to cover innumerable other hazards. A vestige of the original idea yet remains with the modern policy in the shape of double indemnity for travel accidents. In the exaggerated importance formerly attached to this hazard lies the explanation of many of the inaccuracies which crept into

the manuals of a generation ago. The statistician has shown us that, except when journeying upon the deep seas, a man is less liable to injury while traveling by steam railroad, than while in or on any other place on earth. As a matter of fact, it is rare that an injury is sustained by the traveler through means other than an accident to the conveyance and we know that the number of such accidents is trifling when proportioned to the number of those who travel. Today the frequency and extent of the insured's travels is a negligible factor without direct bearing on classification.

"The hand of little employment hath the daintier sense." By association, we become inured to danger. The man engaged in a hazardous occupation is perhaps the last one to appreciate its perils, or rather, to retain an appreciation of them.

In some cases the comparative hazard is apparent; everybody knows that a freight-brakeman is more liable to accidental bodily injury than a college professor—everybody but the brakeman. Compare the commercial traveler with the dentist as regards probability of disability from accident. In the first place, the traveling salesman is less exposed to injury than the dentist. In the second place, a slight injury to the dentist's fingers puts him on the retired list temporarily; his fingers must be in a normal condition to perform his work. He must work on his feet; any injury to his foot is likely to estop him, for a time at least, from following his occupation. But the traveling salesman fares merrily on with his arm in a sling, or a crutch in place of one foot, gathering sympathy, admiration and orders as he goes. Indeed, he must go on, unless his jawbone is broken or dislocated, for to "lay-up" means big hotel bills and the interference of some other salesman with his "trade." Beyond this, the really good salesman is a man of nerve, grit and courage—better remedies than medicine.

These illustrations point to other facts which enter into the classification of an occupation. First among these is what may be termed the *nature* of the occupation. Here we do not consider the effect of the occupation upon exposure to injury, but rather the effect of the injury upon the performance of the duties pertaining to the occupation. To illustrate: a pianist is not more exposed to injury than a lawyer; the slightest injury to the pianist's hands, however, will disable him while the same injury would merely inconvenience the lawyer and in no wise prevent him from attending to his usual duties. Take the watchmaker: a small injury to his hand and the dexterity and skill, so necessary to his craft, are gone. Let the business manager of a mercantile or manufacturing establishment injure his hand, even severely, and he works on serenely. The surgeon constantly exposed to the dangers of septic poisoning affords us an example of occupation in its direct effect upon the injury itself. These examples could be multiplied almost indefinitely. In numerous ways, unthought of by the lay mind, occupation exerts an influence which, unexplained, results in apparently unfair classifications.

Then the accident underwriter is forced to recognize the moral hazard incident to occupation. It is well known that certain occupations are identified with certain classes or grades of men. This fact has a direct bearing on the moral hazard; that is, to the extent that occupation has its influence on the morals of the man following it. Examples of this association between employment and morals are familiar to everyone, and reference is made to instances where the connection is less evident. It has been found that occupations in which employment is not constant or which, by their character, are not followed during certain periods of the year, are particularly dangerous from the underwriter's viewpoint.

The actor is frequently unemployed during the sum-

mer, certain classes of skilled laborers are periodically idle, and so on. Experience corroborates the scriptural truth that idleness leads to trouble. This is particularly applicable in accident insurance. A wound does not heal so quickly, a slight scratch develops into a totally disabling injury, and sometimes—when the injured is unemployed—the accident company is expected to relax its commercial rigor and assume the role of Lady Bountiful.

There is still another point to consider; the influence of the occupation upon the physical state. Physical condition is, of course, a vital factor in accident insurance; not only is the unhealthy risk more liable to injury, to less sure or slower recovery, but complication through disease is not unlikely. The cause of this influence is often hard to assign, but in many cases may be easily seen, as in the intemperate habits of certain kinds of laborers, the excessive physical labor required of others, and the unsanitary conditions under which work is performed.

Accurate classifications can not be attained if the individual is to be considered as a unit. The “personal equation,” ever prominent in accident insurance, does not permit of this. The lawyer in the country milks his cow and harnesses his horse and does the “chores” about the house and is thereby more exposed to accident than the city lawyer. The energetic, prosperous lawyer continues at his work while the lazy, unthrifty lawyer remains at home to recuperate. The company, to protect itself, must, in popular parlance, “strike an average” and neutralize as far as it can, this variance due to individuality of risk. Thus are the desirable members of the trades and professions of life discriminated against; but, in keeping with the dictates of all industrial endeavor, the advantages of the few are abridged by the limitations of the many—the law of average scores against the worthy and the competent.

As accident insurance is not really indemnification

against *accident*, but—instead—*loss arising from accident*, it will readily be seen that women without steady, definite employment are undesirable risks and that men, not regularly engaged in some occupation, are equally so. In this business the time of the unemployed has no insurable value.

In addition to occupation and its associated problems, there are other features, altogether general in their application, that are to be considered in any extended study of rates. Among these is the matter of moral responsibility. Personal immorality whether it takes the forms of habitual intemperance or other dissipation and excesses, or to financial stress, must necessarily affect the risk unfavorably. There is another form of immorality. Policies have been obtained with the intent to defraud. Few companies have remained immune to these attempts. Instances of deliberate designs to rob the insurer are of record. So skillful were some that they ended in success. At times, murder and suicide enter into the scheme, but usually it takes the form of self-mutilation. Strange as it may seem to a normal mind, men actually do shoot off a hand or a foot, or destroy the sight of an eye for the sole purpose of collecting indemnity from an accident insurance company.

If proof were lacking and one cared to test the accuracy of this statement, let him draw his policy to cover \$5,000 for the loss of the right hand and \$1,000 for the loss of the left hand—and it would be dismembered right hands which preponderated in the loss schedules. Reverse the operation, left hands would be falling all over the country. The skeptic might well be curious respecting the frequency with which shooting accidents, and the like, happen on shipboard or train and then perhaps it might occur to him that the “doubling clause” had something to do with the occurrence. Should he pursue the subject further, he would find himself amazed at the extent to

which this question must enter into his calculations. He would observe the petty cases of fraud in which the claimant feigns injury and deliberately prolongs the period of disability.

In many instances persons of eminent respectability make excessive claims utterly oblivious of intentional wrong-doing. They may be charitably designated as "unconscious malingerers." Some otherwise fair-minded persons pervert the meaning and intent of the contract provisions and maintain that their claims should be paid because to disapprove them is to impeach their integrity. Not infrequently, the agent who secured the risk writes to his company that his business will be ruined if a particular claim is not paid; while many insurants and some agents imagine that to whisper the words, "man of influence in the community," is sufficient to cause the company to abandon well settled principles in claim adjustment. It must not be thought from this discussion of fraud that the percentage of dishonest claims is large; quite the contrary: the overwhelming majority of claims presented are honest. Yet the dishonest and exorbitant claims cost time and money.

It will be asked, perhaps, what bearing this moral hazard, since it affects all classes, has upon premium rates. In answering this, we are led to observe the indirect way in which the underwriter makes allowances for the existence of this and other factors. That is, the policy form is so drawn that the benefits and the conditions under which they are payable, bring about a result nearly equivalent to a revision (which otherwise would be obligatory on account of accumulating and varying experiences) of the rate itself. Except as affected by the many changes in classification which are made from time to time, the rates which now obtain have been fixed by long usage and remain invariable through the force of competition; consequently, the underwriter seeks other

means by which he may harmonize practice with theory and by which he may reap the benefit of his accumulated underwriting knowledge and experience. These "means" usually prove to be the policy itself. The company may change its underwriting practice from time to time—that is, certain classes of risks may become unacceptable, particular forms of policies may be restricted to specified occupations, "eliminations" excluding certain hazards or certain injuries may be attached to the policy, and so on.

Rates have declined and become more discriminatory during the past twenty years, and especially during the last decade, through the broadening and liberalization of the policy contract. This broadening has been due in some measure to competition; but it is, in part, the result of an effort to render accident insurance more attractive to the insuring public. Slow but constant increase in underwriting knowledge, ability and experience justify this course. Competition and the necessity of strengthening the appeal of accident insurance have forced the underwriter to apply his experience in this direction rather than in the more complex (though perhaps more scientific) way of constant change and graduation of rates.

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*Table No. 1¹**Revised February 1, 1911.*

CLASSIFICATION OF RISKS.

Each \$1,000 of insurance carries with it \$5.00 weekly indemnity unless otherwise specified.

Occupations are classified by letter, numeral and title, following prevailing practices of various companies.

The numeral 2+, herein adopted, signifies classification "BS," or "Extra Preferred."

As used in this Manual, the following table shows the designations which signify the same classification of risks.

A	1	Select.
B	2	Preferred.
BS	2+	Extra Preferred
C	3	Ordinary.
D	4	Medium.
DS	5	Special.
E	6	Hazardous.
F	7	Extra Hazardous.
G	8	Perilous.
H	X	Extra Perilous.

Any occupation not classified will be rated by the Company upon receipt of full particulars.

¹Table No. 1 is a reproduction of the "explanatory page" of the "Standard Manual" (as adopted by The International Association of Accident Underwriters). This page explains that class "A," class "1," and class "Select" indicate the same classification: that class "B," "2" and "Preferred" are also identical, etc.

PREMIUM RATES

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Table No. 2¹

OCCUPATION.		CLASS.
Carpenter, shop work, using machinery.....	E 6	Hazardous
Carpenter, inside or shop work only, not using machinery.....	D 4	Medium
Carpenter, on river steamer.....	DS 5	Special
Carpenter, ship.....	DS 5	Special
Carpet cleaner, layer, or maker.....	C 3	Ordinary
Carpet manufacturer, superintending only.....	B 2	Preferred
Carpet manufacturer, not superintending or working in mill.....	A 1	Select
Carriage or wagon agent, dealer, or merchant, handling or setting up.....	C 3	Ordinary
Carriage or wagon agent, dealer, or merchant, not handling or setting up.....	B 2	Preferred
Carriage or wagon maker.....	E 6	Hazardous
Carriage or wagon maker, metal worker, not using drop press.....	DS 5	Special
Carriage or wagon maker, wood worker, not using machinery.....	D 4	Medium
Carriage or wagon maker, cloth or leather worker.....	C 3	Ordinary
Carriage or wagon manufacturer, superintending only.....	C 3	Ordinary
Carriage or wagon manufacturer, not superintending or working in factory.....	B 2	Preferred
Carriage painter.....	BS 2+	Extra Preferred
Carriage trimmer and upholsterer.....	C 3	Ordinary
Cartridge and percussion cap maker (not insurable).....	H X	Extra Perilous
Carver, wood or ivory, machine worker.....	E 6	Hazardous
Carver, wood or ivory, hand tools only.....	C 3	Ordinary
Cashier, inside work only.....	A 1	Select
Casket (see Coffin).		
Caterer, working.....	C 3	Ordinary
Caterer, proprietor, supervising only.....	B 2	Preferred
Cattle Commission Broker at Stock Exchange only, Chicago, Kansas City, Omaha, or St. Louis.....	C 3	Ordinary
Cattle dealer, or broker, visiting yards, not tending in transit.....	DS 5	Special
Cattle dealer or broker, not entering pens or handling stock.....	D 4	Medium
Cattle dealer or broker, not tender or drover, not on farm or ranch or in yards, not handling stock.....	B 2	Preferred

¹ Table No. 2 is a specimen page taken from the Manual.

ACCIDENT INSURANCE

Table No. 3¹
PREMIUMS FOR STRAIGHT ACCIDENT POLICIES
(Providing death, dismemberment and weekly indemnities)

Amount of Insurance		RATE PER YEAR									
		CLASS									
A	Death Indemnity	Weekly Indemnity	A 1 Select	B 2 Preferred	C 3 Ordinary	D 4 Medium	D 5 Special	E 6 Hazardous	F 7 Extra Hazardous	G 8 Perilous	H X Extra Perilous
\$1,000		\$5.00	\$4.00	\$5.00	\$7.50	\$10.00	\$12.50	\$15.00	\$20.00	\$25.00	\$30.00
2,000		10.00	8.00	10.00	15.00	20.00	25.00	30.00	40.00		
3,000		15.00	12.00	15.00	22.50	30.00	37.50	45.00			
4,000		20.00	16.00	20.00	30.00	40.00	50.00				
5,000		25.00	20.00	25.00	37.50	50.00					

Larger and smaller amounts at proportionate rates

¹Table No. 3 shows the rate charged for the various classes: it applies only to "straight" policies, that is, policies that do not grant double indemnity for travel accidents.

PREMIUM RATES

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Table No. 4¹
PREMIUMS FOR COMBINATION ACCIDENT POLICIES
(Providing death, dismemberment and weekly indemnities)

DEATH INDEMNITY		WEEKLY INDEMNITY		RATE PER YEAR								
				CLASS								
Single	Double	Single	Double	A No. 1 Select	B No. 2 Preferred	C No. 3 Ordinary	D No. 4 Medium	DS No. 5 Special	E No. 6 Hazard- ous	F No. 7 Extra Hazard- ous	G No. 8 Perilous	H No. 9 Extra Perilous
\$1,000	\$2,000	\$5.00	\$10.00	\$5.00	\$6.00	\$8.50	\$11.00	\$13.50	\$16.00	\$21.00	\$26.00	\$31.00
2,000	4,000	10.00	20.00	10.00	12.00	17.00	22.00	27.00	32.00	42.00		
3,000	6,000	15.00	30.00	15.00	18.00	25.50	33.00	40.50	48.00			
4,000	8,000	20.00	40.00	20.00	24.00	34.00	44.00	54.00				
5,000	10,000	25.00	50.00	25.00	30.00	42.50	55.00					

Larger and smaller amounts at proportionate rates
¹Table No. 4 indicates the rates for "combination" policies. "Combination" policies provide double indemnity for travel accidents.

CHAPTER ~~XXXIV~~
SETTLEMENT OF LOSSES

BY WALTER C. FAXON

UPON the equitable, fair and even liberal settlement of valid claims under policies of accident insurance depends the underwriting success of the company, and upon the firm resistance of fraudulent claims—which frequently arise—depends the financial success of the company.

A middle ground of compromise of claims where there is an honest difference of opinion as to the extent of valid liability, and also where the fraudulent intent is impossible of proof, marks the point where “wisdom is the better part of valor” and the services of the skillful and diplomatic adjuster are indispensable.

No company can long endure in the accident insurance business which has a reputation for unwarrantably fighting its claims, neither can a company long withstand the strain which allows itself to be held up and robbed.

The premiums charged for accident insurance are based upon the amount needed to pay the claims, which experience has demonstrated will likely arise in each occupation, plus the amount needed to cover the cost of securing and caring for the business and for a small margin of profit to those who have invested the necessary capital and have taken the chances of the enterprise.

If the claim ratio soars unduly in a given occupation when it is computed upon a sufficiently large volume of business that has matured over a term of years, the remedy lies in the advancing of that occupation to a higher classification or applying such other restrictive measure as may be indicated by an analysis of the experience, such as restricting the amount either of principal sum

or of weekly indemnity that will be written upon a single risk, or restricting the scope of the insurance as to the benefits. It is, however, often impossible to effect a proper advancement of a given rating, especially in occupations in which large numbers of men are engaged, because of the varying results which may be disclosed by the experience of the different companies without there being any discoverable reason for such variation, or for so-called "business reasons."

Prompt Notice of Injury

Manifestly the first step in the settlement of claims, and one of fundamental importance, is the immediate serving of notice upon the company that an event has happened upon which a claim is likely to be predicated. This notice enables the company through its local representatives, and its medical examiners, to discover whether or not the anticipated claim is to be based upon "bodily injuries effected solely through external, violent and accidental means, which injuries independently of all other causes" have resulted or will result in loss of life, limb, sight or time, or in a surgical operation. In fatal cases the promptness of notice is more necessary than in other cases, owing to the possibility that the true cause of death is not absolutely clear, and the knowledge which can only be obtained through the medium of an autopsy necessary to definitely determine what this is. It is much better when an autopsy must be performed to have it done before burial, and in these days of cremation any delay or failure to give notice where that method of disposing of the body is employed would be highly prejudicial to the rights of the parties interested.

There are two sides, however, to this matter of serving notice of the happening of an accident upon which a claim is to be based. Some years ago nearly all policies called for "immediate notice with full particulars" be-

ing given, and in cases of delayed notice the courts were called upon to interpret the meaning of "immediate notice," which they always construed favorably to the claimant and in case of death especially, favorably to the beneficiary, allowing almost any excuse—such as alleged lack of knowledge of the existence of the policy—the confusion and preoccupation incident to the fact of a death in the family, etc., to warrant the delay or justify it—no matter to what extent the rights of the company had been imperiled. The companies—some of them at least—adopted language requiring notice within ten days under penalty of forfeiture of the claim. The enforcing of the ten-day limit in cases otherwise meritorious led to grave dissatisfaction which is reflected in the recently enacted "Standard Provisions Laws" applicable to accident and health insurance under which (except in fatal cases) notice within thirty days is legally sufficient—and in some states the time is forty and even sixty days.

Most policies—other than those prepared especially to conform to the Standard Provisions Law just mentioned—provide for notice as "soon as may be reasonably possible," and this gives opportunity for the interested parties to determine by the facts of each case what constitutes "reasonably possible" conditions.

Proof of Loss

Notice having been given and its sufficiency as to time when served being granted, it is customary for the companies to furnish certain blank forms to be used in filing the claim. These forms consist of a "Claimant's Affidavit," and "Attending Physician's Certificate" and, in cases where the insured is in the employ of a corporation or firm or in any capacity where he has a foreman or timekeeper over him so that a record is kept of his absence from his work, a "Certificate of Employer" is

required, which certificate simply sets forth the period during which he has lost full time and the period during which he may have worked part time. The "claimant's affidavit," after setting forth the record of the policy under which the claim is being made, proceeds to describe the nature of the accident and the character of the injuries sustained, giving also the precise date—day and hour—of its occurrence. The amount claimed is then stated and his record of previous claims, if any, as well as other insurance he may be carrying is embodied in the statement. The claimant makes affidavit to the truth of his statements and usually the form embodies an agreement on his part that the payment of the amount claimed shall be in full satisfaction of all claims against the company based upon the accident under consideration. If the claim is for a longer period than eight weeks with some companies, or thirteen weeks with others, the claimant is permitted to prepare his claim for such period, and in that event he is not required to sign the agreement as to full and final settlement until his final claim is made.

The certificate of the attending physician gives the nature and extent of the injuries received, the treatment of same and its duration, and also the duration of total or partial disability resulting therefrom.

These papers, together with such supplementary evidence as may be submitted by the claimant and the reports of the agent and company's medical examiner, are carefully reviewed by the claim department, and if the claim appears to be valid under the policy, a check with form of release printed upon the back is forwarded to the agent for delivery to the insured, who simply signs the release and endorses the check at the same time, and gets it cashed at the nearest bank where he is known.

In many instances the state and general agents are authorized to approve and pay indemnity claims within

reasonable limits as to the amount involved, and this is done by the issue of drafts upon the company which are cashed at the banks in the same manner as are the checks already mentioned. In this way the delay incident to sending the papers to the company and awaiting arrival of the check is avoided.

In cases of fatal accidents the proofs are somewhat more elaborate, mainly to establish the identity of the deceased person as the one insured and also to record the disposition made of the remains. This is necessary in some cases because of attempted frauds and also in order that the body may be readily located should autopsy be considered necessary after the proofs have been received.

Claim Problems

In the settlement of valid claims there are many interesting problems that must be considered, and some of these will be briefly stated. It is, however, in fraudulent cases that the resources of the claim department are taxed to the utmost, and the discovery of these fraudulent cases necessitates the keenest scrutiny of all claims, as otherwise they will slip through.

The first question to be considered in every case is, was the insurance in force when the accident occurred?

Policies are written for varying terms, from one day to one year. Relatively few are written for less than three months.

The premiums are paid annually, semi-annually and quarterly. If the record shows the premium for the current term of three, six or twelve months has been reported to the company the insurance is regarded as in force. Otherwise the agent must be called upon to disclose the precise situation upon this point.

The next question is, was the disability due solely to bodily injuries and were they received through purely

accidental means? If conditions were present that are usually described in terms that indicate disease, were they due to the injuries or were they simply coincident, and if coincident were the injuries themselves sufficiently severe to have caused the disability even though the disease conditions were not present?

Is the period of time for which indemnity for total disability is claimed reasonable in view of the medical evidence submitted as to the nature and extent of the injuries sustained?

The same question must be considered in respect to the period of partial disability and especially of partial following total.

Are there any reasons to warrant conclusion that the claim is being unduly prolonged because of over insurance for weekly indemnity, loss of position because of absence from place of employment or disinclination to return to work as promptly as physical condition will permit?

In applying for indemnity for partial disability, has the claimant given due consideration to the provisions of the policy contract, applying only for that to which he is entitled by its terms as applied to the facts, or is he seeking indemnity because of existing pain, discomfort, inconvenience, instead of for actual loss of business time to the extent for which the company has agreed to allow indemnity?

If the claim is based upon the so-called " Double Indemnity " clause of the policy, does it really come within the conditions under which double indemnity is payable? This is very important, and border line cases should be very carefully considered, not only in respect to the case in hand, but as bearing upon future cases, it being important that no wrong precedents be established by the payment of double benefits where single benefits only should be allowed.

Attempts to Defraud Companies

The fact that contracts of accident insurance afford opportunity for the individual insurers to realize great advantages during their lifetime, and that the harvests are not invariably to be gathered by others after the insured have died, as is the case with life insurance, gives speculatively inclined persons the chances they are always looking for to defraud, and some of the ways that have been employed to that end may be of interest.

These attempts to defraud accident insurance companies, many times successful, embrace in their fulfillment nearly the whole category of crime, from simply obtaining money under false pretenses, perjury and forgery, to homicide, self-inflicted injuries and suicide.

They may be conveniently grouped into the following classes:

Over-insurance.

Misrepresentations in applying for insurance.

Simulated injuries.

Self-inflicted injuries, including suicide.

Homicide.

Disappearance.

Conspiracy.

These various schemes could be illustrated by citing many cases. Only a few will be given, just enough to show to what extraordinary lengths people will go to get money, to which they are not entitled, from accident insurance companies.

Over-Insurance

In a case of over-insurance for weekly indemnity, the claimant begins by the concealment of other insurance being carried, or for which application is being made, which, if revealed, would result in the risk being declined; and this concealment is also carried into the preparation of the proofs of loss when claims are pre-

sented to the several companies, to avoid the pro-rating of the several claims to the actual value of the time lost, which is provided for in the contracts of many companies, and might well be considered by many other companies in formulating their contracts. Broken bones and lacerated flesh are very slow in healing when the time being consumed in the process is being paid for at a rate several times greater than the victim would be earning at his regular occupation, and especially is this true with constitutions that habitually require a great deal of rest. Cases of moderate over-insurance are not as a rule regarded as fraudulent, and many cases arise where the fact of over-insurance could not be shown to have had any effect whatever in the prolongation of the period of time for which indemnity is claimed. In such cases there are several reasons which may explain the existence of over-insurance: the lack of consideration of the propriety of keeping the insurance purchased within the money value of the time being insured, a reduction of the earning capacity of the insured after the insurance was taken, or the importunity of agents in securing business and the dislike of the person to say " No " when he knows he has enough.

In one instance the agent had left the employ of the company in which he had insured a certain person, and when the renewal time came around he prevailed upon him to take a policy in the company to which he had transferred, supposing that the first policy would not be renewed. But the agent who succeeded him in the first company prevailed upon the man to retain his policy. Other agents persuaded him to take policies until the man had policies in three or four companies, and then he had a claim. He had no fraudulent intentions, and when he filled out his claim papers he put in his ordinary salary as his time value, and mentioned all the other policies he had, and the indemnity provided by them all

very much exceeded his earnings. When the matter of pro-rating the several claims was taken up with him, he quickly discovered that he was very much more valuable than he had said he was in his claim, and more sources of income were discovered to make him eligible to draw the full indemnity than one would naturally suppose could be overlooked by so valuable a man in naming his original estimate of his time value.

Over-insurance is not confined to weekly indemnity, however, but occurs in almost all losses of hand or foot, where the injuries are believed to be, and in fact are, intentionally self-inflicted. In the majority of cases of over-insurance for weekly indemnity the claimants rely upon the companies not ascertaining the facts, and when these are discovered, they usually accept the inevitable pro-rating of the claim and say nothing. Usually the determination that such cases are fraudulent is somewhat difficult, however much we may believe they are entitled to be counted in that class.

Misrepresentations in Applications

The integrity of the insurance contract is conditioned upon the representations made in the application upon which it is based. If the giving of full and correct information, concerning all matters the application refers to, would be likely to result in the risk being declined, the person applying for insurance would naturally find it necessary to give indefinite statements or altogether wrong statements, so as not to fail in the securing of the policy under which to make his intended fraudulent claims. These misrepresentations are most likely to deal with physical defects, or concealment of the fact that special hazards are to be incurred involving more than the ordinary dangers which the occupations stated in the application would be expected to occasion. The failure to state the fact of having other accident insur-

ance, or of having been declined accident insurance by other companies, or of having had claims paid or refused by other companies, are also misrepresentations that are indulged in to procure the acceptance of the risk and the issue of the policy.

Disappearance

A favorite way of collecting under accident policies is to fix up the evidence so as to show death probably resulted from accidental burning or from drowning, in some cases no body being found, but almost always a substitute being supplied; or, as in one case, evidence being manufactured as to the finding of the body and of its being robbed of its clothing and thrown into the stream again.

Some years ago a man named Thrun obtained several large life insurance policies and a couple of accident policies and then procuring the dead body of a man, put it in his house. The house burned, and an affidavit was submitted in support of the claim, that Thrun told the affiant that he was going into the burning house to recover his papers and money, and thereupon rushed into the house. When the fire had been put out, the charred remains of a body was found in the ashes, and Mr. Thrun could not be found. The circumstances immediately aroused suspicion, however, and an expert was employed to examine carefully the charred bones that were found, to determine the identity of the remains. He decided that they could not be the bones of Thrun. The investigation by several companies resulted in finding Thrun alive; he had simply passed through the house and concealed himself somewhere and subsequently made his escape, but was finally found and the fraud exposed.

In the famous Goss-Udderzook case, a full account of which has been published, the body of a man was put into a shanty in the woods, where, for the purpose of building

up the evidence, the two men Goss and Udderzook lived for some time, claiming to be making experiments in some sort of inflammable or explosive compound. One night the shanty burned and the remains of a man, supposed to be Udderzook, were found in the ashes. They were taken to his home, where his wife fell upon them and claimed to recognize them as her husband, and was overcome with grief on account of his horrible death. Claims were made under the several life and accident policies that had been issued to him, but the companies were very slow in paying, and finally Udderzook, tired of hiding so long while his accomplices were getting no money, and fearing that the fraud would be discovered by the actions or talk of Goss, came out of his hiding and murdered Goss, for which crime he was hanged.

A case involving more complications and covering a wider range of possibilities than is usual, occurred in Texas. The insured was at a farm some eight miles from Waco, at the home of his father-in-law. There was a long narrow room in the house with a fireplace across one end, but near the corner of the room. Between the fireplace and the corner was a pile of fire wood. Next to the pile of wood was a cot or lounge, so close to the wood that the latter rested against it somewhat. Between the wood and the fireplace and leaning against the latter, there stood a double barreled gun. The story was that when the insured came into the room he threw himself down on the couch, and in doing so caused some of the sticks of wood to fall, knocking down the gun, which was discharged, the contents going into his feet, blowing one foot almost completely off and injuring the other. Some of the shot went across the room and lodged in the door casing a short distance above the floor. While the doctor who made a statement of the case was not an eye witness to the shooting he was, nevertheless, sufficiently explicit in his statement to say that the insured's left foot was shot

off by the discharge of one barrel of the gun and that he was at the same time shot in the other foot by the discharge of the other barrel. Just how he arrived at his conclusions I cannot say, unless as a matter of fact he knew the facts in regard to the shooting and inadvertently departed from the story fixed up by the conspirators, and told the truth. When it became known that the insured was likely to get money from two insurance companies on account of the loss of his foot, six or more of his creditors got out garnishment processes and tied the matter so that he did not press a claim for the money. He had been convicted of crime several times, had made claims against fire insurance companies for several fires, was heavily in debt, and had involved his father-in-law through forgeries to a very large amount.

After the stump healed he resumed his wicked career. One night some five months later while the insured was in bed, presumably asleep, the father-in-law and his son might have been seen riding horseback toward the insured's home. They did not approach the front of the house, but going through the adjoining field, reached an orchard back of the barn, where they dismounted and hitched their horses to the trees, went to the barn, took off their shoes, crept stealthily along the board walk to the back of the house, mounted the steps to the gallery or porch, opened the screen door which was but slightly fastened, if at all, and entered the house. In the room in which the insured slept, his wooden leg removed, there was a fearful struggle, at the close of which the cripple, and the junior of the two men lay dead on the bed, both with their throats cut in a most horrible manner. The old man of sixty-eight years retraced his steps to the barn, took his shoes, left those belonging to his son, mounted his horse and leading the other one, went back to his home, where a messenger soon arrived to inform him that his son was dead. Having, meanwhile, changed

his clothing, even to his stockings, he went into town to look after the remains of his dead son. The next morning he confessed the deed, but he was acquitted on the ground of insanity.

After the death of the insured, his widow, the daughter of the man who had murdered him, made claim upon the insurance companies for the full amount of the policies, alleging that the murder was committed by a burglar and that the companies were, therefore, liable.

In addition to the claim of the widow, a claim was made by the insured's mother, as assignee, for the amount provided by the policy for the loss of a leg, and claim was also made for this amount by a trustee in bankruptcy; so there were three sets of claimants, and as they could not agree among themselves it was impossible for a long time to dispose of the case with any one of them. After a while, through the efforts of an attorney, a settlement was effected and the suits withdrawn upon the payment of \$2,000 by the company to the attorney for the widow. What disposition of this money was finally made I do not know. During the investigation of this case it was learned that an affidavit had been made by the insured bearing on the true facts of the case, but it could not be secured until after the settlement had been made. It was thereafter obtained and I will quote sufficiently from it to show the depth of depravity to which men will descend in order to get money, and especially money belonging to insurance companies.

I,, of the County and State of Texas, do swear that I now owe some \$4,500 for borrowed money for which my notes are out and signed by (four persons named) as surety, and that now owes the Citizens' National Bank a large amount of money, and that I now have some \$13,000 accident insurance, also some \$12,000 life insurance payable to my wife in case of my death, and that and his son, have been



after me several times to let some one shoot off my legs so I could get my accident insurance, and they now have made arrangements with to shoot them off tomorrow at Mr. place, some eight miles from, claiming it an accident so I can collect the insurance money, and there being present at the time, who will do the shooting. is to hire or rent a 10 gauge shot gun from as they have shells already loaded to fit, they are loaded with buck shot and said buck shot will be used.

I,, do solemnly swear that the statements on the reverse side are true and correct.

Witness my hand this day of, 19...

Simulated Injuries

One of the most striking cases of simulated injuries was that of a professional man, a doctor, who, representing that his time was of the value of \$250 per month, obtained a combination accident policy for \$5,000 with \$25 weekly indemnity, doubling to \$10,000 with \$50 weekly indemnity. This policy was purchased November 16th, 1904. On the 29th of the same month, while a passenger on a railway train, he claimed that while he was getting a drink of water at the cooler in the car, the floor being wet, his feet slipped from under him and he struck the back of his head against the iron railing on the water cooler. As a result of the injuries received by this fall he claimed to have become blind, first in one eye and then in both, for which he demanded \$10,000, the full principal sum insured under the double benefit clause of the policy. He also claimed to be entirely paralyzed in the left arm; partially paralyzed in the left leg and side, and partially paralyzed in the right side, for which additional calamities he claimed \$2,000, \$1,000 and \$500, respectively; also fees for medical attendance, and in the event of having to file suit to collect these several amounts he claimed 12 per cent. additional under what he and his attorney

supposed to be an effective statute, but which had been declared to be inapplicable to claims under accident policies; and also 10 per cent. for attorney's fees, \$16,470 in all, a very respectable sized gamble on an investment of \$12.50, for he only paid for six months insurance.

The doctor went to an oculist the day following the alleged accident to have his eyes examined. On the 12th of January, 1905, an oculist representing this company made an examination in the office of the insured's attending oculist, who informed the company's representative that on his first examination the day after the alleged fall he found a bruise on the left side of the neck three inches long and two inches in width; that the tissue around the bruise was hard with skin discolored; that the patient could not turn his head *to the left*, any movement or touch causing great pain. He suffered some pain from his shoulder, and his left arm was paralyzed, also some loss of sensation; that at the first examination there was total loss of vision in the left eye, while the vision in the right eye was normal; that there was no evidence of any inflammation or congestion in either eye, except a slight redness of the conjunctiva at the inner canthus of the left eye; that there was no impairment of function of the extrinsic muscles of the eye; *that the eyes could be moved in all directions*; that there was nothing in the examination of the interior of the eye to account for the loss of sight; that the fundus in both eyes was perfectly healthy, with the pupils responsive to light. The local oculist further advised our doctor that on the next examination, made December 2d, he found the vision in the right eye getting worse. On December 5th, he found loss of sight in right eye. Further questioning brought out that frequent examinations had been made between December 5th and January 12th, the date of this examination, without discovering any evidences of disease of either the eyes, nose, ears, throat or mouth, but that the

patient complained of a roaring in his right ear; that he found the vocal chord paralyzed, also paralysis of the tongue.

To give the full report of the doctor's examination would be tiresome. Suffice it to say that when the doctor wanted to have the patient move his eyes to the right or *to the left* he could not do it until after he had reminded the attending physician that he had told him there was no paralysis of the extrinsic muscles, and after he had explained to the patient what our doctor wanted, there was no difficulty in his looking in whatever direction the doctor desired. Notwithstanding our doctor found that his eyes were perfectly normal and his vision unimpaired, the insured spent the next few weeks in various and numerous boarding houses, posing as a blind man and as one paralyzed—a much abused individual who had a claim against a great insurance company that would not pay him what it owed him, but was taking advantage of him in his misfortunes.

It is one thing to believe that a certain condition of malingering and simulation of injury exists, and quite another to establish by admissible evidence that such is the case especially when the tribunal before whom the proofs are to be submitted is a jury. Considerable work had, therefore, to be done to get evidence of the insured's actions during this period, which would show conclusively that he was faking. During all this time he very carefully refrained from telling the people with whom he was living just who he was and what his previous history had been. To test the claimant, company representatives got the man that he was boarding with, some three miles out in the country, to tell him that he had learned that certain parties were hunting for him. Just as soon as he was told that he was being looked for, the claimant packed his grip and departed, leaving about eight o'clock in the evening alone, going no one knows how or where.

He did not go on a railroad train. This was several years ago, and no word has been heard of him and his claim for \$16,000 for total blindness and paralysis. Of course, he did not confine his claim to the insurance company, but undertook to collect from the railroad company as well, this being a favorite device for not only getting the largest amount possible under accident policies, but working the railroad as well.

Another case of special interest because of the extreme improbability of the injuries which were received ever being sustained accidentally, or of their being effected intentionally except by a man desperately in need of money, was this:

Some years ago a man applied for \$10,000 of accident insurance. He had lost his left hand. His occupation, superintendent of agencies of a fire insurance company, would entitle him to the "Preferred" classification, but under the manual of instructions the agent submitted the case to the company for determination of the rate to be charged and the amount of insurance to be issued. As the man had planned to go out of town soon, he arranged with the general agent to issue a policy at the rate and for the amount the company permitted, and the risk was to be considered in force until he could be communicated with and pay the premium. The company authorized the issue of a "regular" form policy for \$5,000 at an advanced premium, equal to the charge for an "Ordinary" rate risk.

Before word could reach this man that the policy had been issued, word was received from him that, in climbing over a fence, while hunting, his double-barreled shot gun was accidentally discharged and his right hand shot off. A witness, who claimed to be standing within six feet of him, made affidavit that the shooting was entirely accidental. The proofs were duly submitted and the claim paid.

It subsequently developed that, just prior to the loss of his left hand, which was also shot off, he had applied for a policy in an accident insurance company, the agents of which could not issue policies, as all policies were written at the home office. The premium for this policy was to be \$8, of which he paid \$5 at the time of signing the application, and sent the balance, \$3, to the agent a few days thereafter. The company delayed the issue of the policy, for at that time he gave his occupation as a theological student. Upon learning subsequently that he had been called to a church, the policy was issued, but dated some time after the date on which his hand had been shot off.

Claiming that, by the acceptance of the \$5, the agent had bound the risk, a suit was brought for the amount payable for loss of the left hand, which suit, at the time the second policy was issued, was pending in the Supreme Court of Georgia, but of this fact the company issuing the second policy had, of course, no knowledge when the risk was accepted. The case was decided in favor of the company.

In July, 1897, this man was convicted of forgery and sentenced to three years' imprisonment in the penitentiary, from which he was released by pardon of the governor, mainly because a prisoner who had to have a valet in attendance was a nuisance in a penitentiary. While in prison he wrote a book entitled "From the Pulpit to the Penitentiary," in which he reviewed his early life and confessed to many forgeries which he had committed to raise money.

While the shooting accidents may have been accidents in the true sense of the word, the evidence of the double life he was leading at the time, as revealed by his own confession, throws a dark cloud upon his protestations that they were purely accidental, and the only point which lends color to his statements being true is the fact

that he did not get his accident insurance in force beyond any question in either case before the events upon which his claims were based.

The lessons to be derived from these cases and the hundreds of others which the companies have experienced, are, the exercise of the greatest care in the selection of risks, the adoption of every means of obtaining information as to the honesty of claimants, and co-operation between companies in supplying each other with reliable information concerning both applicants and claimants. In the greed for business the companies have been, figuratively speaking, falling over each other in depriving themselves of conditions in the policy contracts which are so much needed in order to successfully defend against the payment of fraudulent claims, and claims that should never be considered as coming within the scope of an accident policy.

The insuring clause of the policies has been substantially unchanged for these many years, but in many cases it has been regarded by the courts as simply an introduction to the policy contract and of little importance in itself. If the "conditions" of the policy did not contain a specific exception to liability that exactly fitted the circumstances of the case under consideration, the fact that the death or disability was due wholly or in part to other causes than bodily injuries or, if due solely to bodily injuries, they were not effected through external, violent and accidental means, would have no consideration in determining that the company was liable, and the decision would be in favor of the plaintiff. For fear of offending the sensibilities, or hurting the feelings of would-be insurers, or because an entirely proper and inoffensive clause in itself might permit of something being done by a company manager or his agent that would be objectionable if done without due regard to the proprieties, the agents of one company would proceed to

“ hammer ” a clause in the policy form of another company, when, as a matter of fact, there might be worse in their own policies, and so one restriction after another has been eliminated, and the point has now been reached where reliance must be had almost alone upon the language of the *insuring clause*, which as already indicated, has not had the benefit of judicial determination to the same extent that it would have had, if the policies had not contained “ conditions ” upon which the companies relied for their defenses. The net result is that many claims will hereafter have to be paid in full, which are not fair claims under the contract, because there is no language with which the company’s agent or adjuster can convince the claimant that the claim is not a valid one, and he cannot or will not understand that the insuring clause means that the claim under consideration is not valid, and it being impossible to convince the claimant and his or her attorney that such is the case, the chances of convincing twelve jurymen will be regarded as equally hopeless, and so the claim will be paid and charged up to “ experience.”

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CHAPTER XXXV
HOME OFFICE MANAGEMENT
BY WILFRID C. POTTER

A CHAPTER on the organization and management of an accident company, as to its investments, its deposit of securities, the election of its officers, and a general description of the various departments of such a company does not admit of a "pen of romance" or a "flight of fancy," but requires nuggets of solid facts strung upon a thread of experience.

As the requirements for the organization of an accident company, though differing somewhat have in most of the states a general similarity, a selection has been made of those of New York under the belief that its laws pertaining thereto will give a good general idea of organization requirements.

These requirements are briefly as follows:

Thirteen or more persons to become incorporators by making and filing in the office of the superintendent of insurance a certificate, signed by each of them, stating their intention to form a corporation for the purpose of making insurance against injury, disablement or death, resulting from traveling or general accident, and against disablement resulting from sickness and every insurance pertaining thereto, and in such certificate setting forth a copy of the proposed charter which shall state the name of the proposed corporation, the place where it is to be located, kind of insurance to be undertaken, the mode and manner in which the corporate powers of the company are to be exercised, a provision that the number of directors shall never be less than thirteen, the manner of electing its directors and officers (a majority of whom shall be citizens and residents of the state), the time of

such election, the manner of filling vacancies, the amount of its capital and such other particulars as may be necessary to explain and make manifest the objects and purposes of the corporation. Such certificate shall be acknowledged and recorded in a book kept for that purpose by the superintendent of insurance, and a certified copy thereof delivered to the persons executing the same.

Inasmuch as under the law a company, having a name the same as or similar to any corporation already authorized to do business in the state cannot be incorporated, it would be wise before selecting a company name to ascertain from the attorney general if its proposed name is the same or similar to that of any existing corporation.

Upon receipt of a certified copy of certificate of incorporation and after publication of notice of intention to form such corporation for six consecutive weeks in a paper designated by the superintendent of insurance, books may be opened to receive subscriptions to capital stock.

No accident company can be organized with a smaller capital than \$100,000, fully paid in in cash, and in order to be prepared to meet the actual and contingent requirements of establishing such a company upon a good working basis, it should, outside of its capital and not to be considered as a capital liability, be provided with a working surplus of at least \$50,000 in cash. If the capital and surplus were doubled, or more than doubled, it would be so much the better for the success of the company.

Before receiving authorization to do business, the company will be required to deposit with the superintendent of insurance at least \$100,000 in cash, or securities, consisting of stocks or bonds of the United States, or of the state of New York, or bonds of a county or incorporated city in the state authorized to be issued by the legislature (none of these securities to be estimated above their par, or current, market value), or bonds and mortgages on

improved and unencumbered real property in the state worth at least fifty per centum more than the amount loaned thereon; the buildings, if any there be on such property, to be kept insured in such sum as the superintendent of insurance shall approve. The residue of its capital, if any, beyond the amount so deposited, also its surplus money and funds, may be invested in or loaned on the pledge of any securities in which deposits are required to be invested, or in public stocks or bonds of any one of the United States, or in such real estate as it may be authorized under the law to hold, or, with the direction and consent of two-thirds of its board of directors or finance committee, it may invest by loan or otherwise any surplus money or funds in bonds issued by any city, county, town, village or school district in the state, pursuant to any law thereof, but all such securities or investments must be income bearing or dividend paying.

After approval by the attorney general of the declaration and charter of the proposed company, the superintendent shall cause an examination to be made by himself or one or more competent and disinterested persons, into its affairs, and the incorporators will be required to certify under oath that the amount of capital required by law has been paid in and is in the possession of the company in cash or invested in the manner required by law, and thereupon the superintendent shall file the certificate in his department, and upon the corporation depositing with the superintendent of insurance at least \$100,000 in cash or securities as is required by law, authority to transact business in the state shall be issued.

The purchasers of the capital stock become electors and from among their own number elect the directors in the manner and as provided in the charter and the officers of the company are elected by the directors, from among their own number, and are to hold office for one year and until the election and acceptance of office of their suc-

cessors respectively, and should consist of a president, one or more vice-presidents, a treasurer, and a secretary, the last named of whom need not be a director. The directors should also elect or appoint a finance committee and an executive committee, each committee to consist of not less than three. The president or executive committee should be authorized to appoint, as requirements of business demand, a superintendent of agencies, who should be a man knowing through actual experience the requirements for successful agency work; he is to command the company's producing force and to so inspire and enthuse the agents that they will be constrained to be continually "up and doing." He should have the cordial support of officers and directors and be furnished with all reasonable facilities and aids in the getting of business. The officers above mentioned also have authority to appoint a cashier, an accountant, a chief bookkeeper, who, under the supervision of the accountant, is to have charge of the general books of the company, a chief clerk to have general supervision of the clerical or office work and the office employees, except in the bookkeeping and claim departments. The chief clerk should appoint a chief policy writer, a chief of the registry books, indices and cards, a chief of renewal notices and renewals, furnishing for each such appointee such clerical assistants as the business of the company may demand, and such other aids, assistants, office boys, etc., as may be necessary for the speedy and efficient conduct of the business. He should be held responsible for the efficiency of his office force and therefore should be given the right and authority to dismiss or employ as may become necessary, and, under the direction of the president or executive committee, fix the salaries of such of the clerical force as he is authorized to employ.

As the matter of acceptance or rejection of applications is of vital import, a person thoroughly practical and

experienced in the accident and health insurance business should be, by the president or executive committee, designated for, and given the duty of, examining each application for accident or health insurance and accepting or rejecting the same as may be for the best interest of the company, and his dictum should govern as divided authority in this matter is not wise. Accident insurance is not to be done by guess work or as a favor, and while it may perhaps be truthfully asserted that in all kinds of business there is a certain element of gambling, yet there is such a thing as the science of business, and the proper conduct of the business of insurance is not only a science, but an applied science, and this is especially true of accident and health insurance. The greatest care should be exercised in the acceptance of applications, and the classification of risks should be rigidly adhered to. It should always be borne in mind that various diseases through their resultant effects have a distinct bearing upon the eligibility or acceptability of an applicant for either accident or health insurance even to a greater extent than for life insurance. The life insurance company is at least partially protected by medical examinations but such measure of protection has not yet been adopted by accident companies; therefore, even greater care in the acceptance of risks should be exercised, and any mention or indication of a past illness or disease, or present ill health, should demand the closest scrutiny and fullest information. That which would cause declination, or even postponement, in regard to life insurance should as a general rule cause the same action in regard to an applicant for accident or health insurance, it being accepted as a truism that an applicant who is not fully qualified for life insurance is certainly not qualified for accident insurance. It is ever to be remembered that although it is the province of a company to promptly pay claims arising by reason of accident or illness, it is

not its purpose, nor is it either an act of wisdom or conservatism to anticipate or lay a foundation for payment of claims which the company, with proper care and discrimination, would not be saddled with.

The financial affairs, investments, salaries, expenses and general conduct of the business are to be under the general supervision of the board of directors and the proper committees appointed by such board.

A committee on claims, consisting of the president, secretary and treasurer of the company, should be appointed by the board of directors to have supervision of the claim department and the investigation and adjustments of claims, and all claims should be approved in writing by at least two of the committee before payment. Only men of absolute justice and fairness should be employed as adjusters or investigators of claims,—men who, while ever mindful of the interests of the company, are not unmindful of the measure of justice and equity due the claimant.

A company with its organization thus fully completed is quite ready to take up its work, and in order that system may be established and its business carefully and conservatively handled and taken care of, it will be wise to adopt methods and treatment of business submitted similar to those herein briefly described which description will necessarily include mention of the principal books and forms needed in the conduct of this part of the business.

Upon receipt of an application the first step is to decide as to the acceptability of the applicant for the kind and amount of insurance applied for; therefore, it goes immediately to the person whose duty it is to carefully examine and pass upon that point. After careful examination, should the application be accepted, it is stamped "approved," initialed by the examiner and then sent to the cashier's department where it is stamped

with the date of receipt, and blue penciled with the amount of premium represented, and then entered upon the " Agents' Charge Book," under the following headings:

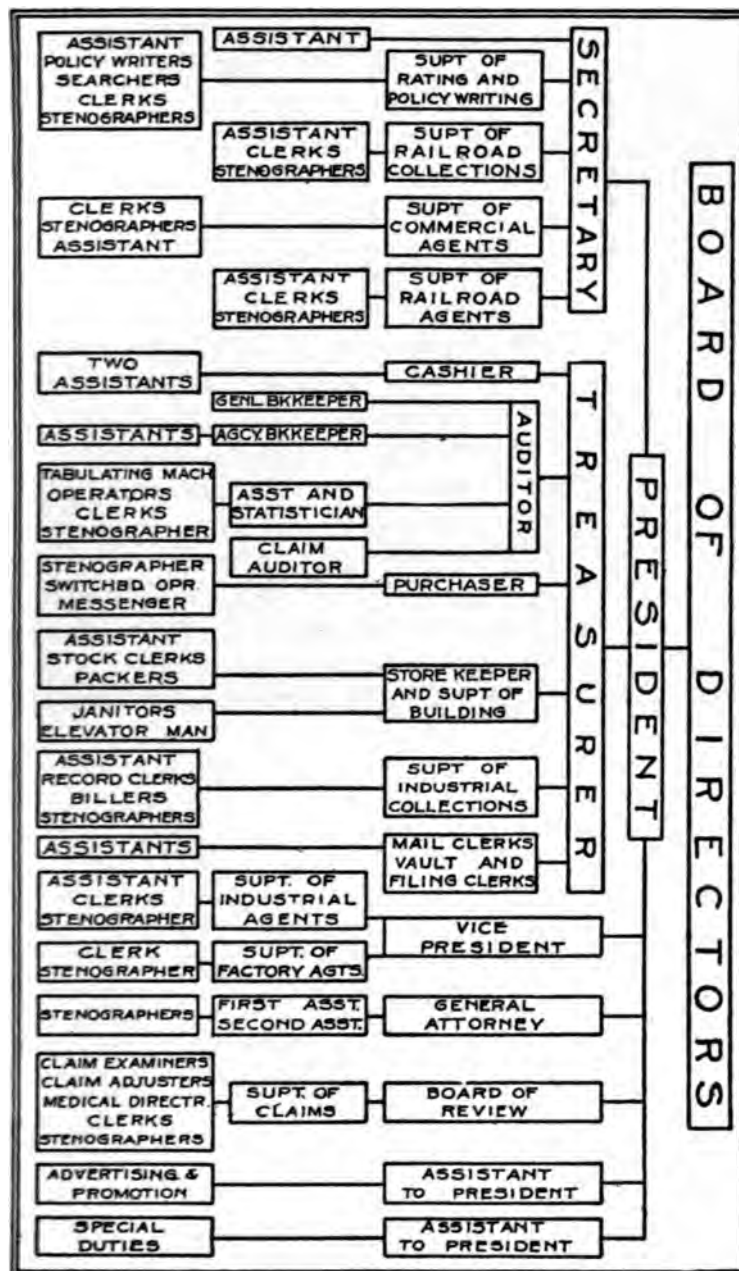
Date.

Name of Applicant.

Name of Broker.

Amount of Premium Represented.

The application is then handed to a searcher, who searches the indices, registers and cards of the company in order to ascertain as to any previous policy that may have been issued to the applicant. This is done not only for information in regard to any previous record, but also to prevent over-insurance. The application then goes to the policy writing department, where it is entered upon the application numerical register, which is ruled, in columns, under headings as follows: Date, number (which means the number to be also given to the application and to the policy, the numbers in this column being printed consecutively), name of insured, name of broker, kind of policy, edition, how payable, premium, remarks. The purpose of this register is not only for numerical correctness, but, as will be hereafter shown, for proving purposes. With a numbering stamp the clerk numbers the application in its proper place with number corresponding to the number in the application register, and having received its register number, it is passed to the policy writer, who writes a policy, numbered correspondingly, in accordance with the data in the application. The written policy is then examined and carefully compared with the application by the chief policy writer, and, if found correct, he countersigns the policy as having been so examined. Every person through whose hands the application passes initials the same in its proper place, thus not only giving evidence that the requisite steps for the protection of the company and the systematic conduct



of the work have been taken, but affording a means of tracing and correcting errors. The policy having been written and examined, is ready for delivery from the policy department, either to the agent in person or forwarded by mail pursuant to instructions.

The applications received and entered during the day are assembled the following morning and the amount of premium represented by them is totaled; the amount of premium entered upon the agents charge book for that day is also totaled, and the amount of premium on the application numerical register for the same day's work is recorded. The totals from these three sources must agree, otherwise there is in evidence error which must be traced and rectified. The system of books suggested is based upon the theory of a perfect check upon the work done and the speedy detection and correction of an error.

Subsequently the application is passed to the keeper of the general register, which register is ruled under the following headings on the left page: Date, number of policy, name, beneficiary, age, address, kind of policy, edition, broker, premium. On the opposite, or right page, number of policy, expiration date, premium (under the word "premium" is printed annually, under "annually," semi-annually, and under that quarterly), and the balance of the page is ruled in columns headed by the current year and years to come, as, for example, 1911, 1912, 1913, 1914, etc., each of these columns being vertically ruled into four small columns for the purpose of making "check entries" as and when premiums are paid, and the last column on the page is headed "remarks" for notations such as "Also holds policy No. _____" or any other remarks necessary for a complete history of the policy, which is the purpose for which this register is kept.

This register should be of about 200 pages, which will be sufficient to record 5,000 policies; larger books are

heavy, unwieldy and apt, in handling, to come apart by reason of their weight.

The next step is a record made from the application upon cards. The card system suggested is most convenient for ready reference in regard to policies issued and in force. The cards should record the month of due date of premium, number of policy, name and address of the assured, occupation of applicant, beneficiary, age, height and weight of applicant, kind of policy, date when premiums fall due, amount of premium and how paid, whether annually, semi-annually, or quarterly, and date and amount of premium paid. The name and address of the broker should appear on the right upper corner, and on the lower left side a space for recording claims paid, if any. There should be twelve sets of cards, a set for each month in the year, and a filing box for each set. The cards should be filed in alphabetical order in the box of the month in which the premium falls due. Before filing the cards they should be compared with the record as given in the general register in order to make certain that there is no error either in the cards or the general register. From these cards the renewal notices and receipts are prepared, and in case of lapse or cancellation of a policy, the card record thereof is taken out of the box, a proper entry made on it, and it is filed in a box prepared for the filing of cards pertaining to lapsed and cancelled policies.

A set of vowel index books will be needed, consisting of three volumes, covering, first volume, A-G (inclusive), second volume, H-O (inclusive), and third volume, P-Z (inclusive). The applications, after having been entered on the cards, are given to the keeper of indices, who makes the proper entry in the index, giving the name of assured and the number of policy. The application then goes to keeper of book "Premiums on New Business" (referred to later) for entry of premiums therein. All

this work completed, the applications, duly perforated, are then ready to be bound for filing, and should be bound in books of one thousand consecutively numbered applications each, and placed in a filing cabinet in numerical order, convenient for ready reference when needed.

As these applications constitute the basis for policies issued, they should not be taken from the files except in cases of absolute necessity, in which event, a charge slip should be made and put in place of the application, this slip giving the name of the person taking the application and stating for what purpose it was taken, this person being held strictly responsible for its return.

In addition to the agents charge book for new business, there should be another charge book for renewals, and from these two books entries are made in the general day book to the debit of agents' accounts for the amount of premium on new business or renewals, each entry giving the policy number with initials to show if it is a policy or renewal. From this latter book postings are made in the agents general ledger to the account of the respective agents. The cashier should have a book for the entry of amount of premium paid, each entry giving number of policy, name of agent, and amount of premium paid, the book being ruled in two columns, one headed "policy" the other "renewal," the payments on the new policy being placed in first column and premium paid on renewals being entered in second or renewal column. From this book the credits are made in the agents ledger to the respective agents and from which ledger the requisite monthly statements can readily be prepared. The agents charge book and the cashier's book, referred to, should be in duplicate to be used on alternate days, thus giving the book of yesterday to the bookkeeper for entries to be made therefrom.

On the general ledger there should be kept a premium account to which the full amount of premiums due on

new policies should be credited and to which premiums on policies not taken, cancelled, and unearned premiums should be debited; also a renewal premium account to which should be credited premiums on all renewals issued, the debits being the premiums on renewals not taken, cancelled, and unearned premiums. Also a commission account, which should be debited with all commissions payable to agents and credited with commissions on not taken, cancelled and unearned premiums. If health insurance is done the above accounts are to be duplicated for the health business. Accounts should also be kept under the following heads: Accident indemnity claims, accident death claims, health claims, investigation and adjustment of claims, salaries and fees of officers, directors and office employees, salaries of agents, legal expenses, printing and stationery, postage, telegraph, telephone and express, furniture and fixtures, general expenses, traveling expenses, interest, rent, stockholders' interest or dividend, state taxes, insurance departments' license and fees. Vouchers must always be taken for all moneys expended, it being understood that for minor expenses, such as messenger, street car fares, or other incidentals, the entries on the petty cash book, to be kept by the cashier, will be considered vouchers, or vouchers may be made by the cashier from it.

In preparing renewal receipts for premiums coming due a blank (about the size of small note paper) should be used, headed with the name of the company followed by

Policy No.....
Name
Address
Receipt sent to.....
Receipt charged to.....
Cash

This slip, having been filled out up to and including the address, and initialed by the clerk, is handed to another

clerk having charge of making out the renewals, who fills out the renewal receipt, makes the proper entries at the foot of slip handed him, initialing the same, and after comparison of the receipt with the slip to guard against errors, the slip is given to the keeper of book "Cash Premiums Renewed" (referred to later) for entry of premiums therein, and then is ready for filing with the other slips for the current month. The renewal receipt after entry in "Renewal Charge Book" is ready for immediate delivery, if cash payment is to be made, or if delivered or mailed to the agent.

Practical application of the methods and system outlined herein, will demonstrate that for every step taken a check is established for the detection and prevention of errors.

There should be books prepared and kept as follows:

One book the leaves of which are headed "Premiums on New Business" while the pages below are ruled in sections, each section being devoted to a month of the year and headed as follows: "Premiums expiring January," and underneath ruled in vertical columns and headed, first column, the current year in numerals, as, for example, "1911," second column "Number" and third column "Premium." The next section will be for February, the next for March, and so on for each month of the year; six sections on page to the left and the other six on page to the right, parallel lines to the number of thirty to be ruled across the page, the lines corresponding to the number of days in a month, and underneath these sections on each page there is to be a heading "Premiums on New Business Not Taken" to which two or three parallel lines may be given. The entries in this book are to be kept by states, each state, where doing business, to have such number of leaves as may be requisite, and the books which follow are to be similarly kept.

Another book headed "Cash Premiums Renewed" is

ruled in precisely the same manner and below the thirty lines a heading on each page "Premiums Paid in Advance of Month when Due," and underneath beginning each parallel line with the current and two following years, as, for example, 1911, 1912 and 1913. It should be understood that under these lower headings in all the books the vertical ruling should be the same as in the upper part of the page.

Another book headed "Premiums on Policies Renewed and Not Taken," ruled the same as described for the previous books, and still another headed "Charged Premiums Renewed" also ruled in same manner.

The main purpose of these books is to permit of ready ascertainment of required reserves.

These books as described are for accident insurance and duplicates should be made for health insurance if the company is doing that branch of the business. The health duplicate of each book may be under the same covers as the accident, thus saving the handling of so many books.

The claim department has and keeps its own set of books so far as regards the record of and action on claims presented. An accident claim book is required, the pages being headed: Claim number, policy number, name, address, nature of injury, notice of injury received, claim blank received, date of payment, amount paid, remarks.

A similar book for death claims and also a book for illness indemnity claims, in the latter the word "illness" being substituted for "injury" as appears in the other books. There should also be a card system, the cards having similar records entered on them and being filed by states, the cities and towns of each state arranged alphabetically and the names of claimants also arranged alphabetically in each city or town. A claim index should also be prepared, showing the names of claimants and claim numbers. The claims are to be numbered consecu-

tively in the order of notification and records are kept and referred to by such numbers.

Large envelopes should be prepared for holding claim papers, and on the back of each should be printed:

Claim No....., Name....., P. O. Address.....,
Date of Accident....., Nature of Injury.....,
Proofs Filed....., Indemnity Claimed....., weeks
and days....., Full Indemnity Allowed.....,
weeks and days at \$....., Partial Indemnity Allowed
.....weeks at \$....., Amount of Payment \$.....,
Payment approved by....., Remarks.....

Envelopes of a different color from those used for accident indemnity claims are prepared for death claims and of still another color for illness indemnity claims, and upon settlement of a claim the envelopes containing the papers are filed in the claim cabinet in consecutive numbers. The investigation, adjustment of claims, the preparation of claim papers and proper filing of same, after settlement of claims, constitute the duties of the claim department. Payment of claims are made from the cashier's department by check, using a different check book for accident and for health, the checks being of different color, to permit of being readily distinguished and errors thereby prevented.

An accident company also doing a health insurance business, must on its books and in all accounts keep the two kinds of insurance separate.

In preparing this chapter the writer has sought as far as the nature of the business would permit (bearing in mind that all records must be kept in full and with corresponding checks to insure absolute accuracy) to simplify methods and make plain and clear the information sought to be conveyed.

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CHAPTER XXXVI
AGENCY MANAGEMENT

By ALFRED E. FORREST

To essay the treatment of a subject of such large dimensions and capable of being handled in so many ways is an undertaking more worthy the collaboration of a commission drawn from the ranks of the most successful managers of accident insurance companies than for the brain and pen of any one man.

Treating this subject from an actual, rather than an academic standpoint, two distinct channels should be followed—one dealing with the management of the small corporation launched with the minimum amount of capital and surplus required of a company organized to conduct an interstate accident insurance business as distinguished from the other company incorporated with a view of doing accident and other kindred lines of casualty insurance, capitalized and provided with surplus sufficient to warrant the expenditure in its first business year of such funds as are required to employ skilled special agents to cover a large area, and acquire by purchase prosperous agencies built up by companies already in the field.

The object of both companies is the building of an institution that will be permanent, as well as remunerative to the investors.

The management of the larger company, while requiring, in this day of keen competition, unusual business ability, can purchase a head for each department who is skilled in the profession, while the manager of the smaller organization must have within himself all of the elements found in the selected employees before mentioned.

Let us then consider the successful handling of the

smaller company from inception to accomplishment, as its management, lacking in funds, must accomplish through skill and experience alone what the other class of company can obtain by purchase.

The promotion of an accident insurance company should be on the same basis as that of a bank or mercantile concern. The capital must be paid in in full; the necessary initial surplus obtained through a premium above the par value of the stock should be intact, as the very nature of the business precludes the advisability of looking for dividends from underwriting for several years. If a large promotion expense has been incurred the management is hampered from the outset by a desire to show the stockholders that their investment is at least intact.

An accident insurance company with \$100,000 capital paid in can receive a license to transact business in a sufficient number of states to provide a spread to underwriting sufficient to get an average of claims, but with \$200,000 capital the company can be licensed in any state of the United States. A paid-in surplus—and the larger the better for the success of the undertaking—is a necessity, as the initial expenses, such as furnishing an office, paying salaries to employes, the cost of examination required by law to be made by the state insurance department of the state in which the company is incorporated, the printing of literature, and the providing of reinsurance reserves, must be met without impairing the capital.

The minimum amount required by law to be deposited with the insurance department of the state granting the charter is \$100,000 in all cases where an interstate business is undertaken. The deposit is made in the name of the company in such securities as the law provides, usually in approved registered bonds or first mortgages on real estate worth at least double the amount of the

mortgage. The interest coupons are detached as they fall due and returned to the company by the insurance official in charge of the deposit.

The constitution and by-laws should be as elastic as the statutes of the state of incorporation will permit, having in mind the necessity of operating within their limits in forty-six states, the insurance laws of which differ in many respects.

The statutory deposit made, the surplus and remainder of the capital, if any, in a safety deposit box, usually safeguarded by a provision that the box can be opened only in the presence of two or more named officers, then the manager selected by the directors to handle the company's affairs must be ready to put into actual practice his ideas as to how best to accomplish the object for which the company was launched.

In theory a company is managed by its board of directors; in fact it is handled by one or two officers, and by observation we have come to recognize that the successful company has one strong man at its head who is given, or assumes, authority to say yea or nay, and by his word binds the company as irrevocably as if the question had been voted upon by a full board of directors.

The personality of the manager of an accident insurance company spells for its success or failure; the company thrives or starves according to his ability to handle the complex problems with which he is confronted. He has a license to commence operations in a well-worked and most difficult line of endeavor. He must consider the paid-in surplus of his company as his actual capital, knowing that at the close of the first fiscal year he must spread to the world an account of his stewardship and that a diminution in surplus means to the uninitiated a certain loss of prestige, and prestige is a large part of the drawing power of any insurance company.

After selecting his office staff from the best material

obtainable at such a price as he can afford to pay—cashier, application inspector, claim inspector, and what clerks are required—his first thought must be the planting of agencies within such territory as his judgment suggests will bring the best immediate results.

The drafting of policies and literature explanatory of same is usually an easy task as the line of least resistance is sought, and policy contracts similar to those in use by successful predecessors and contemporaries are adopted, frequently with the addition of some pet incubus evolved from a theory, such as, for instance, the inclusion of a clause covering double benefits for travel accidents, increasing benefits for persistent payment of premiums, etc.—something to make the policy appear more attractive than anything being offered by other companies. It is soon demonstrated that other companies will adopt any idea that looks promising, the result being that no advantage is gained by any attempt to stray far from the practically standardized form, which varies but little throughout the entire country.

The manager new to the business wastes some money on the idea that the insuring public will, on reading an advertisement or a direct appeal by letter, flock to his company and save him the commission usually paid to agents. That plan is quickly abandoned and the real agency work is commenced.

There are so many ways of reaching agents that it would be impossible to enumerate all. Advertising in insurance journals, magazines, and the daily press reaching the territory which is selected to be covered, as well as a thorough circularizing of agents listed in directories furnished by different insurance journals, brings prospects, some of whom can be secured through correspondence, but a systematized trip covering the best towns in the territory is advisable—a personal acquaintance with the agent is almost a necessity.

The easiest thing in the world is to get agents, but after a few weeks' trial it dawns on the new manager that there are agents and agents, but what he needs is men who will produce applications. Some inducement in the way of extra compensation, extended territory, of which he has much to give, or the held-out proposition of advancement with a new company will secure from agencies of larger concerns an initial force of application producers for a small company. The sub-agent of a general agent of the larger company frequently becomes a valuable representative for the smaller.

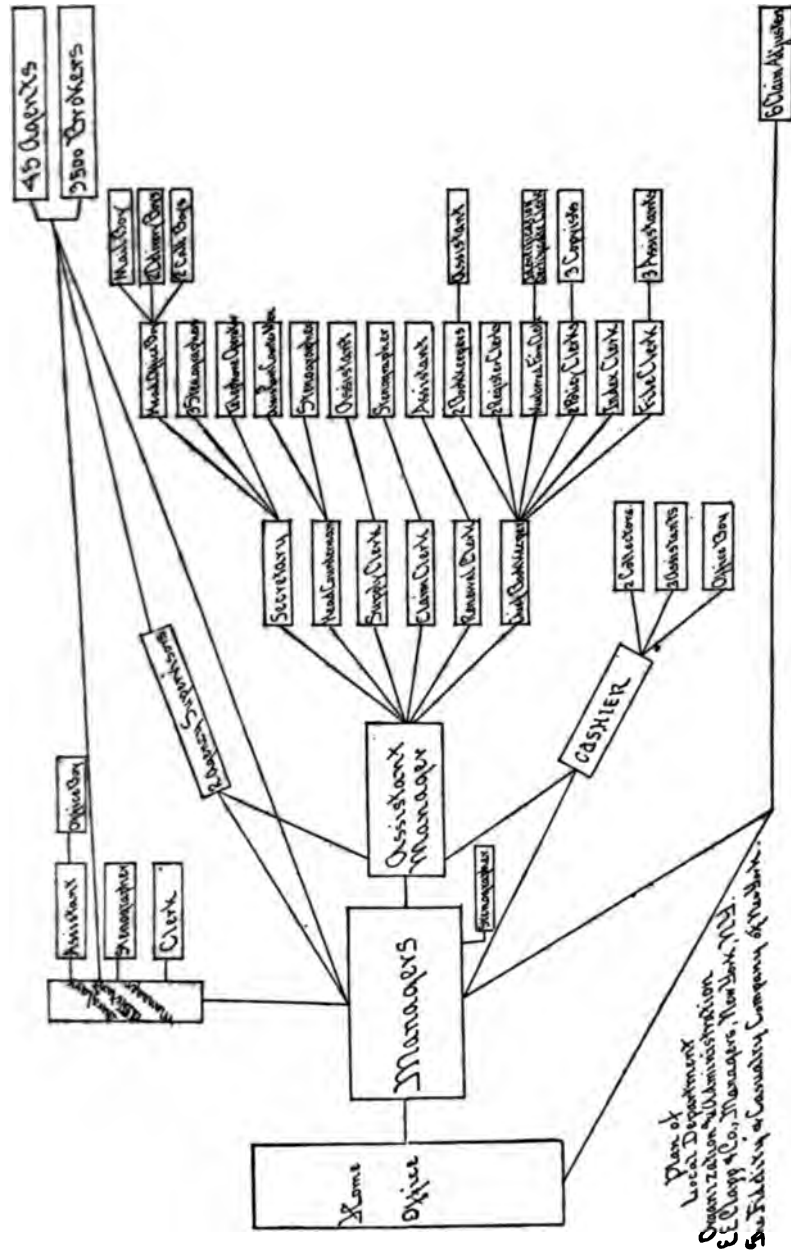
The successful manager must be a good student of human nature to avoid the hulks and derelicts infesting the business, the cast-offs from other companies and the failures in other lines, who, thanks be! are getting less numerous every year. He must be firm but not wholly lacking in credulity; willing at times to experiment contrary to his better judgment, learning through his own mistakes as well as those of others; broadening and profiting but always with an eye open to the inevitable reckoning at the close of the year.

Many agents are attracted to a company through observing the pleasant relationship between its field workers and the home office management. Affability is a good asset and the spoken word of the manager should be as true as gospel and as binding as a signed contract. Many agents are won away from an old, well-established company by a desire to sell insurance in a virgin field which a new company can offer, or by being helped in some small circumstances outside of the printed rules and regulations found in the "Instruction to Agents" in the manual of all companies.

It is especially true that mobility—the lack of set rules and established policies so common in cumbrously managed companies—old established corporations, the executives of which seem to think that by right of primogeni-

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ture, getting there first, or some divine prerogative they own their agents and the earth around them—attracts more good men to new companies than are secured by the payment of abnormal commissions.

Indulgence by the company of an agent's pet theory, or some new idea, oftentimes puts new life into a moribund agency, and the wise manager will recognize that all the wisdom of conducting the business of an accident company does not rest within the confines of his own brain. The expense of such an indulgence should be weighed and the prospective results measured.

The outlay for printing a new form of policy to fit a particular class of risk, or to cover some new thought of the man in immediate contact with the particular public in his territory, should not be considered a hardship by an institution dealing only in promises to pay. The printer's demands should be one of the heavy items of expense in all such companies.

The agent, equipped with a license from the insurance department of the state in which he works, a certificate of authority from his company, a full line of supplies, thoroughly inspired with confidence in the ability of his company to meet all obligations assumed—and this is a prerequisite of a successful campaign for applications—becomes a walking advertisement—the best that a company can have.

His contract with the company secures to him a field for work usually free from the interference of other agents of his company; specifies his authority, when he shall make accounting and remittance, how long he may hold a policy without having to pay an earned premium; is made for a stated term of years, and becomes a constitution and by-laws under which he works, and it is well for the manager to see that the written agreement is lived up to by both parties, and if any changes are desirable that they be made in writing.

Many managers secure from the agent a surety or personal bond in making contracts, but the great majority of agents are not bonded, and the percentage of losses through embezzlement or breach of trust is smaller in a well-managed accident insurance business than in almost any other line involving the handling of so large an amount of money in such small items. When the agent does not make his accounting and remittance strictly in accordance with contract, it is the business of the company to investigate promptly, study out the reason and decide as to whether or not there will be a recurrence and further expense involved.

At the close of the first year the management expenses are necessarily shown to have been heavy, but the manager will find that the loss ratio on an increasing business is smaller than the normal shown by official statistics of established accident companies, and that his surplus has grown. He should bear in mind that he has no reason to expect a lower loss ratio than the combined experience of the other companies indicates, and should reduce his expenses so as to permit of a corresponding increase in claims.

Careful study of statistical tables relating to accident companies shows that certain states furnish a large volume of premiums with smaller loss ratios than do certain other states, and it is a safe practice to avoid the more hazardous territory, unless a study of conditions is made and only such contracts as can be safely sold on account of their limitations are introduced. For example, the state of Texas, at one time recognized as an unprofitable state for accident companies, has been profitably operated by the elimination from contract covering of the accidents or homicides caused by shooting.

Unworked fields avoided by other companies because of the "established rules" previously mentioned frequently prove a bonanza to new companies. Lack of com-

petition makes it easy to secure good agents and a larger volume of business than can be had in a well-worked territory. The United States of Mexico, an avoided field, intelligently handled, provided one new company a good start and helped it over the summit of its first year hill with a handsome addition to its surplus.

Each year that the company adds to its strength by its own accretions it can afford to add new states in which to operate and put out new special agents to pick up promising men, frequently from lines outside of the insurance business, with whom they work until the nucleus of an agency is established, dividing commissions on business personally written by the special agent and the field agent while working together. Then the special goes to the next town and repeats the operation.

In the past a large territory, often a whole state or a number of states, was farmed out to one man termed a "general agent." This way of handling the business looks attractive to a young company and may be followed provided proper safeguards as to the volume of business to be produced are contracted. However, very few companies are following that course today. This plan has given place to the districting of a state in accordance with the apparent ability of the agent to handle the district. It cannot be expected that a general agent, even with ample capital and ability, will have the same interest in properly and thoroughly working a large territory as will a number of agents dealing direct with the home office; and where the territory is divided among many the loss by disaffection or death of one or more agents does not mean the calamity that the loss of the general agent means to any company, especially if he transfers his allegiance to a rival institution.

The best managed company with the most loyal force of agents will frequently find that its business is being transferred to another company, for it is one thing to

secure a good agent, another to hold him against all the allurements offered by other companies, the most enticing of which is an excessive compensation for his work, and the manager must determine from the agent's past record whether or not he can meet the offer of the other company. If the agent has violated his contract and gone with the other company without having given the required notice, then it behooves the manager, if the business warrants the expense, to have a special take charge of the abandoned territory until a new local representative can be secured. Other measures failing, it is usually well to raise in the mind of the disaffected agent a question as to his ability to transfer his risks, the result, perhaps, of a number of years' work, by putting sufficient energy and expense into the holding of the business to demonstrate to the field at large that the company considers business on its books as belonging to it when abandoned by the man who placed it there.

The securing of a first-class, efficient agency force is of such vital importance to the company and so expensive a work that it behooves the company to make of each man as much of an interested part of the organization as is possible, holding the force together by every effort and legitimate device discoverable to the management.

A home office centrally located in the territory covered facilitates operations. There is no set plan or rule for keeping the army of district agents, sub-agents, collectors and adjusters properly at work. The field needs constant attention, such as changing conditions suggest. The gaps left by death, dissatisfaction, and other numerous causes, as well as a closer working of the ground, require perpetual search for good men, and constant education of those at work, bringing many of them in time to a point where they become good underwriters.

Establishing divisions, geographically arranged for convenience as to access and economy in travel by a super-

intendent or assistant manager, handling the correspondence and looking after the interests of the company either from the home office or one more centrally located, has proven very satisfactory to many companies. Only some man educated in a home office, thoroughly versed in all matters pertaining to its necessities and limitations—the agent will acquaint him with his—should be entrusted with the work. Only well-posted, loyal and careful accident insurance men should be entrusted with remote, isolated offices. Better keep out of a distant state until such a man is available.

The importance of co-operation of the home office staff of accountants, policy writers, claim examiners, supply department heads and correspondents cannot be overestimated as an adjunct to the field men's efforts in building and maintaining. Accounting must be prompt and exact and if a mistake in a statement be made, rather let it be against than in favor of the company. Nothing is more annoying to an agent than delay in receiving policies, except, possibly, failure to get supplies with which to work. A poor adjustment of a doubtful claim or delay on the part of the home office in paying approved claims is a prolific cause of loss of good agents, but the worst mistake that can be made is the slighting or treating lightly any communication coming from the field. The contents of every letter received should be carefully weighed and promptly answered by some person capable of appreciating the writer's needs, even moods.

With a large agency force bombarding the home office with demands, complaints, suggestions, etc., correspondents, and, in fact, the whole inside working force, are inclined to treat the field collectively, when, as a matter of fact, the personality of each agent should be studied in an effort to cater to his wants and bind him closer to the company.

No manager who fails to visit and make a study of

conditions in the field—looking from the outside in—should be given the responsibility of final arbitrament in agency matters. Conditions exist which cannot be guessed at but must be seen to be appreciated, and money spent by the manager in a personal visit to as large a portion of his field as is possible makes for economy and intelligent handling of the real backbone of his business.

A splendid medium for keeping in touch, exciting friendly rivalry, encouraging diligence, producing enthusiasm and generally educating the agent, is the company newspaper, made as interesting as possible by personality and brightness.

Presupposing honesty, the virtues to be most encouraged in the agent are desire for work, exactness in all transactions, enthusiasm, and loyalty—not in this particular order, but synthetically, and there is nothing more certain than that constant employment by the home office management of every one of these desirable manly attributes will in time bring the desired result. Virtue in the manager discourages vice in the managed.

If this chapter were simply theoretical, a much more exact science of agency organization and management of an accident insurance company could be described and a pleasanter quarter hour given the reader, but as it follows actual operations and observations extending over a period of more than twenty years in successful up-building from a small beginning, and is intended for the eye of men new to the business, it necessarily must lack much in finish and detail, the filling-in of which would occupy most of the space between the two covers of a large-sized volume.

For example, a chapter might be written on the subject of educating the agent in a proper selection of risks, a proper safeguard against lapsing, and the transformation of a simple commission seeker into an intelligent accident underwriter. Another, fully as large, could be

devoted to the subject of esprit de corps of a home office organization, and how to build and maintain it.

Each department is worthy a chapter, as from the office boy to the general manager, and from the latest appointed collector to the largest producer of business, every man employed by an accident insurance company becomes an integral factor in the agency organization and management of an accident insurance company. The subject is one that cannot properly be summed up.

There is no infallible needle pointing out a set course over which an accident insurance manager may steer his craft, the erosions of competition, common sense and foolishness are constantly changing the channel, and he who ships his treasure in any new insurance vessel manned by novices, expecting a speedy and safe delivery, shows less wisdom than did King Midas in his interpretation of the messages from the Delphian Oracle.

CHAPTER XXXVII
MEDICAL EXAMINATIONS

BY W. EDWARD MAGRUDER, M. D.

Examinations for the Underwriting Department

MEDICAL examination, as in life insurance, of each individual applicant for health or accident insurance has not found favor among accident companies for several reasons. First, because of the expense, the addition of two or three dollars in examiners' fees to the cost of securing a policy appearing to the underwriters as an unnecessary burden. Second, owing to the fact that accident policies are based upon a schedule of warranties or statement of facts in the application which becomes the assured's contract with the company and upon the truth of which the policy is issued, medical examination, by such examiners as are now available, not only fails to help materially in the estimation of a risk, but may prove the means of depriving the company of the ability to avail itself of a defence of breach of warranty in certain cases when such defence might prove invaluable in the prevention of imposition. Third, the adoption of universal examinations by the accident companies as now practiced in life insurance, would lead, no doubt, to legislation and court decisions calculated to limit the right of cancellation by the companies, for it is but reasonable to suppose that the inauguration of the plan of examining all risks would, naturally, be met by the demand that the policy be maintained in force by the company to the end of the term for which it was originally issued. Fourth, the report furnished by the average examiner seldom conveys to the experienced accident underwriter information which is in any way comparable to what he can ac-

quire through bureau records, inspection reports, correspondence with other companies, his own ability to read between the lines of an application and, in the event of claim, through the information obtained from the claim department and the careful scrutiny of the claim papers. Fifth, owing to the present plan of appointing medical examiners, which will be discussed at length below, their reports of examinations prove of little service and are often positively ludicrous when seen through the eyes of the experienced home office underwriter. Sixth, the general examination of applicants for accident and health insurance would increase the difficulty of securing new business and lead to trouble with the agency force.

In appropriate cases, however, under the direction of the underwriter, even with the poorly trained examiners now available, much valuable information may be obtained through medical examination. Some of these may, with advantage, be mentioned here by way of illustration.

Examinations for Health or Disability Policies

Applications showing previous disability from carbuncles, felons, boils, or recurrent abscesses should not be accepted until the applicant's urine has been examined and diabetes found to be absent.

Attacks of grip, tonsillitis, pharyngitis, rheumatism, arthritis (which is a term often used by physicians in their effort to conceal an existing rheumatic infection), scarlet fever, typhoid fever, diphtheria and septicemia, owing to the frequency with which disease of the heart is associated, arouse the suspicion of the vigilant underwriter as do likewise any of the various forms of heart disease; and he is fully justified in considering the risk impaired until he has the heart thoroughly examined and its condition accurately determined.

Experience has shown that gastritis (so-called) and acute indigestion when appearing on an application or

claim blank should be carefully scrutinized as a favorite disguise in which gallstones, appendicitis, gastric ulcer, cancer of the stomach, alcoholism, or Bright's disease may be parading, while the presence of jaundice should always be thought of as a probable forerunner of attacks of gallstones. Medical examination in behalf of the company in such cases often throws light upon some serious underlying trouble and the saving thereby may prove considerable.

History of dysentery, especially in the southern states, should demand a medical examination on account of the possible existence of one of the chronic diseases of which diarrhoea and bloody stools are prominent symptoms and which may recur at intervals and cause prolonged periods of disability, complicating abscesses of the liver or other serious consequences.

Previous inflammatory diseases of the ears should suggest the advisability of a medical examination before assuming the risk of possible mastoid abscesses or of an attack of meningitis from the subsequent extension of infection from long standing middle ear disease.

Recurrent attacks of bronchitis, "congestion of the lungs," all cases of alleged pleurisy, a history of recent pneumonia and prolonged illness from grip, when considered in connection with an application, are sufficient causes for postponing the acceptance of the risk until medical examination convinces the underwriter that tuberculosis or chronic organic disease of some variety does not exist.

There are certain border-line cases in which it is largely a matter of opinion of the individual underwriter as to whether he orders a medical examination to determine the physical condition of the risk, accepts it with endorsements eliminating some recurrent disease or condition, or refuses the business altogether.

A good example of such a condition is that of appendi-

citis, for the relief of which an operation has already been performed. Owing to the fact that hernia may subsequently occur through the line of incision in the abdomen, some underwriters require the assured to sign an endorsement eliminating disability or future operation for the relief of abdominal hernia. Others endeavor to ascertain through correspondence whether the appendix was removed or the abdomen simply opened and drained. Upon hearing that the appendix was removed and the incision closed immediately without the use of drainage, they accept the risk without endorsement but, in cases in which rupture of the abscess has occurred and the abdomen is opened and the appendix is not removed or if drainage is used, they realize the fact that a future operation with consequent disability is probable for either the cure of a hernia through the weak abdominal wall or for the subsequent removal of the appendix and they require an endorsement or decline the risk. Other underwriters request their medical examiner to secure the desired information and then accept the risk with or without qualification upon receipt of his report. In cases where a history of dizziness or vertigo has been given, some underwriters refuse to consider the risk for any kind of policy, while others refer it to their examiner with the request that he ascertain whether the disturbance resulted from diabetes, Bright's disease, arteriosclerosis, alcoholism, some serious nervous disorder or whether it resulted from some error in refraction which would be corrected and the risk rendered safe by the use of properly adjusted eye-glasses.

Every underwriting department has a list of diseases which experience has shown must be looked upon with suspicion, owing to their habit of recurring or resulting in serious losses.

The frequency with which the underwriter calls upon the medical examiner to assist him in determining the

extent to which the risk is impaired by any of these diseases, and the methods to employ in bringing it up to the average, if insurable at all, depends upon the underwriter and the customs of the company with which he is connected.

Examinations for Accident Policies

The medical examiner can, with advantage, be called on to assist the underwriter in the estimation of risks for accident insurance in certain classes of cases which will be mentioned briefly, while, of course, there are many special conditions confronting the underwriting department from time to time upon which the importance of medical investigation becomes apparent.

Aside from the well established rules relating to weight, height, age, occupation, etc., which have to be considered by the accident underwriter, he endeavors to ascertain the existence and extent of any disease or condition which (1) has a tendency to increase the liability to accidental injury, and (2) may retard or prevent recovery in the event of injury taking place.

There are, naturally, various circumstances under which diseases or conditions which predispose to accidents are equally active in complicating the results of any injuries sustained. Alcoholism is, in all probability, the greatest single factor in the production of loss under accident policies and should, therefore, engage the attention of the underwriter and cause him to avail himself of every possible aid in determining its existence in applicants coming before him for consideration. Aside from the proneness of those following certain occupations to become impaired through excessive indulgence in alcohol, there are certain diseases which may be mentioned in the application for insurance or discovered through correspondence with other companies in relation to previous claims, which always arouse suspicion and which cause the underwriter to require a careful medical examination

and confidential inspection before clearing the risk of suspicion of being a chronic alcoholic.

When previous disease of the heart is discovered at time of considering the application, either through history of rejection for life insurance or otherwise, or when its existence becomes known through the claim department, in any one already holding a policy, the exact conditions must be ascertained by careful medical examination to determine whether the defect is of such a character that sudden death or prolonged disability is likely to result.

History of disease of the kidneys which may become known to the underwriter through the statements concerning the existence of albumen in the urine, at some past life insurance or other examination causes him to require medical examination before considering the risk for accident insurance.

Those who have at some past time suffered from tuberculosis of the lungs, pleura, glands, bones or other regions, are not acceptable to the underwriter for accident insurance without careful medical examination to determine the present condition of health and for the purpose of estimating the probabilities of future recurrence of the disease. In lung cases, particularly, companies do not usually consider tubercular subjects favorably unless they have undergone a cure or unless a long period of time has elapsed since any active symptoms of the disease were manifest.

History of recurring abscesses, or boils or repeated septic infections, arouses suspicion of the existence of diabetes and the underwriter satisfies himself through medical examination whether he can safely accept the risk for accident insurance.

The history of symptoms which point to the existence, past or present, of gonorrhœa, syphilis, arteriosclerosis, nervous diseases, eye, ear and throat troubles, rheuma-

tism, paralysis, all diseases from which fainting spells, vertigo and sudden death may result, in addition to the conditions mentioned previously, when brought to the notice of an underwriter will usually cause him to demand a medical examination before issuing accident insurance.

All histories showing inherited abnormalities, previous injuries to or diseases of the bones followed by shortening or other deformity or defect, as well as of injury or disease involving important joints and limiting their function, arouse the vigilance of the underwriter who, in a number of instances, finds it advisable to appeal to his medical examiner or to a competent x-ray operator for assistance in ascertaining the exact condition of the accident risk under consideration, and for the purpose of determining the degree of ability with which the applicant can protect himself from accidents and, in the event of injury, his probable limit of resistance to its consequences.

Medical Examinations for the Claim Department

It will be impossible in this discussion to go fully into the numerous diseases and injuries which afflict claimants under accident and health policies, and are brought to the notice of the claim departments, and for the investigation of which the services of the medical examiners may be required. It, therefore, seems better to consider the subject in a broader way, and suggest methods by which the medical departments of the accident companies may be rendered more efficient.

The employment of physicians for the protection of accident companies against fraudulent claims has been customary since accident and health insurance have been in existence and, owing to conditions which will be described, there is a growing tendency on the part of accident companies to rely more than ever upon their medical advisors, for it is to them they must turn for assistance

in keeping the loss ratio within limits which admit of profitable business.

There are certain facts which officials in claim departments, at home offices, as well as adjusters in the field, who have had any degree of experience, have undoubtedly fully realized. Some of these may with advantage be mentioned here. The most important single element in the consideration of accident and health claims by insurance companies is the unfavorable attitude of the attending physicians, as they alone can, without injustice, be held responsible for inspiring nearly all of the claims which prove troublesome to insurance companies, either through suggestion or as a result of their strong desire to please rather than arouse the opposition of those from whom they gain their livelihood. The extremes to which medical men of unquestioned standing and ability will go in order to assist their patients in the collection of claims against insurance companies is really appalling. In many instances, claims which would not come to the attention of the companies, except through the assistance and ingenuity of the family doctor, are so well prepared to meet the requirements of the policy, that many of them are paid by the claim departments without question.

It is only fair to say, in behalf of the attending physician that, although he is to a greater or less degree responsible for every case in which the companies are imposed upon by claimants, under accident or health policies, he almost always renders this service to his patient without the thought of any direct financial benefit to himself. He makes the mistake either through his desire to accommodate his patient and avoid the trouble of a conflict with him over what appears to be a trivial matter, or he has learned by experience that, in order to hold his practice, he must comply with the wishes of his patients in the filling of claim blanks, wherever possible, under

penalty of having them go to some competitor who will give them the service which they desire.

The overcrowding of the medical profession has not only made it hard for the average physician to make a living but, owing to the previous limited requirements of some of the medical schools and boards of registration, every community has certain unscrupulous physicians with whom the reputable ones are in daily competition and, unfortunately, some of the methods practiced by these charlatans are unconsciously adopted by those who are naturally expected to be beyond the reach of such demoralizing influences.

The attitude of attending physicians toward insurance companies is attributable, no doubt, to the same conditions which determine the feeling of the public toward corporations and, apparently, causes them to think themselves justified in resorting to measures which they would not think of employing in their transactions with individuals. Physicians are probably also inclined to the unjust belief that insurance companies are always awaiting opportunities for taking advantage of their policyholders and that it is their duty as medical advisers to furnish all possible protection to their defenseless patients.

The attorneys who prey upon insurance companies and corporations and are conspicuous for their activity both in securing the claims of individuals for collection and in the methods to which they resort for the accomplishment of their purposes, could not exist without the aid of medical men for, without the certain knowledge that they can always find one or more physicians in each community willing to go on the witness stand in support of almost any contention they may make, they would immediately lose their activity and efficiency as resourceful damage suit lawyers. Realizing, therefore, that the attending physician is the most important factor in the promotion

of claims against insurance companies, what measures can be adopted for the protection of the companies against this imposition?

It is in such cases that the employment of physicians to make examinations on behalf of the companies becomes necessary, for it is only through the careful work of examining physicians that incorrect statements by family doctors and claimants can be detected and their consequences overcome.

The time is probably near at hand when the companies will have to give more attention to the personnel and training of their medical examiners for, with the existing competition, the liberalizing of the insurance contracts, and the increasing ingenuity of claimants, more attention will have to be given to the validity of claims presented, and, to this end, better service will be required from the companies' examiners.

The plan followed by many companies of allowing their agents to appoint the medical examiners is one of the causes for the poor service which the examiners, under present circumstances, are giving. In such cases the general agent, with an eye single to the production of business, usually appoints every physician in his community who can be induced to purchase an accident policy, or influence others to become policyholders, and examinations are distributed among these examiners in proportion to their value to the agency, and without any reference to their qualifications. Other companies appoint several examiners in a town, either those suggested by the general agent, or selected by the company's traveling special agent from among his friends and these, working under the general agent and dependent upon him for distribution of examinations, learn by experience that unfavorable reports are likely to be followed by the employment of less careful examiners. An otherwise competent

examiner under such circumstances usually falls into the fatal habit of agreeing with the agent in his opinion that the risk must be continued or the claim paid for the good of the business and, therefore, for the best interests of the company. Still other companies select and appoint their examiners with some degree of care but, with the appointment made, they seem to feel that their duty has been discharged and make no effort to train them so that they may render efficient service to the claim department.

In order to develop a corps of examiners over the country of value to the underwriting and claim departments, the appointments must be made with an extreme degree of care and, in addition to training the examiners by calling their attention to special conditions to be investigated, and criticizing their failures to cover the essential features of an examination in their reports, they must be made to feel that the truth is what the company wants, regardless of whom it hurts, and that the examiner who searches for and accurately imparts the true facts to the company will have the support of the home office and cannot be penalized by the general agent and have his work withdrawn by him because of the thoroughness with which the examinations are made.

Instead of having a large number of examiners in each city or town, a company under ordinary conditions should appoint but two, of which one should be the chief examiner and the other the alternate. If all examinations in the territory are referred to the chief examiner, when available, he derives valuable experience and, with the knowledge that he is the responsible examiner for the company in his community and that he will receive all of the examinations, he is encouraged to give the highest degree of service of which he is capable. It would be desirable, for similar reasons, whenever possible to do so, for several companies, at least, to employ the same

examiners in a town as the additional experience derived from the more extensive work would increase the efficiency of the service rendered to all of the companies employing them.

No complete list of names of examiners who are employed by accident companies has ever been prepared and those directories now accessible contain many names of physicians who are not qualified in any particular for the work. There are several ways in which the names of physicians who are available as examiners, or who are susceptible of training for the work may be obtained and, after careful investigation, selection of suitable men may be made.

1. The various companies engaged in business in the place where an appointment of examiners is to be made can be written to and the names of their examiners thus secured.

2. The list of accident examiners which has been prepared for the Insurance Year Book published by the Spectator Company may prove of assistance.

3. The list of examiners approved by the Detroit Conference may be consulted.

4. Both the Medical Directory published by the American Medical Association, Chicago, and Polk's Medical Directory published by B. L. Polk & Co., Detroit, should be in the library of the claim department of every accident company and will render valuable assistance to those in search of medical examiners.

These directories indicate the age, date of graduation and the name of the college in which medical education was received, in addition to the specialty, if any, which the physician has taken up.

There are several things which should have attention when selecting an examiner from any of these lists. The standing of the school from which he was graduated

should be taken into consideration; he should not, under ordinary circumstances, be a man over forty unless he has already acquired skill as an accident examiner, and his business ability and moral character should be of a high standard. It has been found by experience that physicians who have been extensively engaged in making examinations for life insurance companies are usually less satisfactory as examiners for accident companies than men who have devoted themselves to extensive private practices and had opportunities for familiarizing themselves with the results of diseases and injuries among their own patients.

The frequency with which physicians are employed for the examination of claimants under accident and health policies depends largely upon the customs of the various companies. In order to acquire the true facts relating to an illness or injury, upon which a claim has arisen, it is usually necessary to have the claimant examined and such examination, when made by a competent examiner, not only assists in bringing out the truth, but the knowledge of the fact that the company will have an examination made by a careful man has a deterring influence upon the claimant and his attending physician and makes them less extravagant in their statements on claim blanks which they realize may eventually be called in question.

Careful examining physicians who have had training by the home office so that they are thoroughly familiar with the intention of the policies with regard to house confining and non-house confining disability for illness, total or partial disability for accident, and other conditions and limitations in the contracts, and who realize the importance of testing the truthfulness of the statements in the original application, can often render the company valuable service by clearing up misunderstandings between claimants who do not understand their policies and

the companies who are desirous of meeting their actual liabilities.

With more attention paid by the companies to the selection and handling of their medical advisors over the country, they can develop a corps of officials whose ability and loyalty can be counted upon in the protection of their interests and the prevention of imposition on the part of claimants, attending physicians and attorneys.

Competent examiners can save the companies money on almost every claim and, under both accident and health policies, it is quite likely that medical investigations will eventually be ordered by all companies in nearly every case of illness or accidental injury immediately upon receipt of notice.

When, as sometimes happens, a medical examiner is found to possess the temperament, tact, and experience necessary to fit him for the adjustment of accident and health insurance claims, he should receive all possible encouragement and training by the claim officials at the home office and his fitness for this work made known to other companies so that, by securing additional work, he may gain experience and be rendered all the more efficient to the company through which he was originally discovered.

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CHAPTER XXXVIII
SICKNESS INSURANCE

BY REINARD S. KEELOR, M. D.

It is the purpose of the writer to present for the benefit of underwriters, solicitors or agents, and students, a succinct historical account of the introduction and development of insurance against sickness in the United States, following with an account of the present status of the business, the technique employed in dealing with problems that arise in the underwriting and claim departments of companies writing such insurance, and to forecast in a general way the probable future of the business. The reader will have noted the caption "Sickness Insurance," and may have wondered why the term "Health Insurance" was not employed. The term "Sickness Insurance" is certainly more descriptive, although it may be less euphonious than the term "Health Insurance," and since accurate description is desirable in a work of this kind, the term will be employed here even at the sacrifice of euphony.

Origin and Development of the Business

Insurance against loss of time resulting from sickness has been furnished by the so-called Friendly Societies in England, and by the trade guilds in Germany for a number of years, but it should be remembered by the reader that the term "sickness" as used by these societies includes incapacity resulting from accidental injuries as well as from disease, and that the members of these societies are said to be "sick" when they are disabled—whether from injury or disease.

In the United States it was first undertaken as a commercial enterprise in 1847 by the Health Insurance Company of Philadelphia, organized, as the name would seem to imply, for the specific purpose of insuring against sickness, and having an authorized capital of \$100,000. A company was organized in New Jersey, and several in Massachusetts, about the same time. The Philadelphia company prepared a premium table in which risks were arranged in age groups beginning at 20 years, and ending with 60 years, and the premium charged for a weekly indemnity of \$4 for risks in the first group (20 to 25 years) was \$5.25. An increase was made in the rate charged for each succeeding group, and it was contemplated that each risk must pay the schedule rate for the attained age of the individual upon renewal of his annual policy.

The commissions and other operating expenses were then very much less than they are at this time, so that the actual premium available for the payment of losses was considerably larger than would, without some thought upon the subject, seem possible, and yet each one of the companies referred to very promptly failed and retired from business, the trouble in each case having been due to an unfair selection against the company in the character of risks offered and accepted; there was a preponderance of risks belonging to the higher age groups for which the premium rates had not been loaded sufficiently to meet the average rate of sickness, affected as it must be by increasing age, and then, too, it was made apparent that insufficient precautions against the acceptance of defective risks had a large share in the general result that brought about the downfall of these companies.

Following the pioneer work above referred to, the business of sickness insurance in the United States lapsed into a condition of innocuous desuetude, relieved only by the sporadic attempts of a few life insurance companies,

in the decade following 1860, to create an interest in such insurance, until about 1894, when a little rider, covering only eight zymotic diseases and attached as an adjunct to accident policies, made its appearance, and from this rider, by the process of gradual evolution, sickness insurance as we now know it, took its rise. Beginning cautiously (and very properly so), with a separate policy covering a limited number of diseases, and sold at a premium rate of \$2 for each \$5 weekly indemnity, stress of competition soon caused the list of named diseases to be gradually extended, until finally the policy covering any sickness made its appearance.

The so-called "Limited Sickness Policies," covering sickness due to any of the diseases named therein, are still sold by a few companies, some companies charging \$2, while others charge \$3 for \$5 of weekly indemnity. It seems, however, to be the consensus among underwriters, that the class of persons who purchase these policies in preference to policies that cover every kind of sickness, but cost more, are the very class of persons likely to seek, for instance, to have a case of ordinary intercostal neuralgia called pleurisy, if the limited policy covers that disease, and will be sure to proclaim the unfairness of the insurance company if a right diagnosis of the illness is insisted upon, and obviously occurrences of this kind are not calculated to promote business.

Some underwriters have not looked particularly for profit in sickness insurance, but have taken it up and pushed it merely as a "feeder" to stimulate the development of their accident business, and have accordingly insisted upon only covering sickness concurrently with accident insurance, issuing for that purpose what is known as a "general disability policy." Other underwriters have contended that if the premium charge made for the sickness feature of disability policies is adequate, it is illogical to assume that the same premium will not

provide the same insurance under a policy that does not cover accidents, and that if some part of the accident premium is really necessary to help pay the claims for sickness, the logical thing to do would be to increase the premium for sickness insurance under both forms of policy, and the constant increase in accident loss ratios and consequent narrowing of the margin of profit would seem to add weight to this argument—the only alternative being a reduction in the cost of conducting business.

All of the policies issued by casualty companies in this country are annual contracts, which may be either renewed or cancelled at the pleasure of the company, and doubtless the course of the companies in this respect has been justifiable, because they have been "sailing on an uncharted sea" having nothing to guide them but the experience of the Friendly Societies of England developed under conditions differing widely from the conditions that prevail here among the classes from which the underwriter gets his sickness insurance risks.

In the opinion of the writer, however, co-operation on the part of eight or ten leading companies to the extent of furnishing their experience covering sickness insurance underwriting for the years 1907, 1908 and 1909, all of which is now available, showing the number of days exposure for each year of attained age between 20 and 65 years, and the number of days of sickness suffered for each year of attained age, if no other data were furnished, would provide a good and safe working basis for the construction of an American experience table, and enable underwriters in this country to safely take the next step in the development of sickness insurance which, needless to say, contemplates the issue of a policy having no cancellation clause, but covering sickness from any cause, and terminating when the assured attains the age of, say 65, or upon his earlier death.

The premium for a policy such as is here referred to

must, as may readily be understood, be loaded at the age of entry so that the investment of that part of each annual payment, remaining after deducting expenses, and the compounding of the interest accumulations, will be adequate to meet the increased cost of sickness which the individual may be expected to suffer as his age advances. The unearned premium reserve computed from experience tables entitled to confidence, would at the beginning be considerably less than 50 per cent. of the premium received by the company, but for obvious reasons this reserve must be increased from year to year during the life of the policy. In the event of the lapse of a policy through the failure of the assured to pay his premium, the accumulated reserve would revert to the company and be passed to its surplus account.

Level premium sickness insurance under continuing policies, in lieu of the annual policies now issued, is sure to come—probably sooner than many of us now think possible—and it will give a tremendous impetus to the business transacted by the companies, and the imminence of this next step in sickness underwriting would seem, under these circumstances, to justify more than a passing allusion in a treatise upon the general subject of sickness insurance, and the writer, therefore, offers no apology for his digression. The writer has published the results of his study of an American experience involving more than 37,000,000 days of exposure,¹ and, having extended his study to the consideration of additional experience involving a very large exposure concerning which no results have as yet been published, has reached some general conclusions which may be stated here for the benefit of those who desire to make a special study of American experience. These conclusions, briefly stated, are:

¹ The reader is referred to the printed proceedings of the Convention of the International Association of Accident Underwriters for 1906, for details concerning the experience referred to.

(1) An experience of sufficient volume to reduce to a minimum the element of chance in dealing with each year between age 20 and age 60 will probably not materially affect results obtained in dealing with experience by age groups, assuming that the groups do not include more than five years each; (2) for the accurate determination of the ratio of increase in the prime cost of a given indemnity, with a view to naming a premium at age of entry to carry the risk to a given age—say 65 years—an experience table worked out upon the basis of years rather than age groups, is desirable, but not a *sine qua non* for a beginning; (3) the average rate of sickness among risks entitled to select and preferred classifications, according to existing accident manuals, will (if proper selection is maintained) be less than the rate shown by any of the English experience tables; (4) while medical examination would be of some value in securing proper selection, such examination would be of much less value in sickness insurance than it is in life insurance, because a number of conditions tending to unusual morbidity are not as easily detected as are those conditions tending to shorten life, and the effect of medical selection would be more quickly lost than it is in life insurance.

The conclusions referred to above have been reached by studying American experience arranged in age groups of five years each, and this plan was adopted because it was found that in attempting to exhibit the average rate of sickness for each year of attained age, the actual exposures for some years were wholly insufficient to afford reliable results, and if these conclusions are correct the further statement that a pure premium of about \$3.75 annually will be required to provide an indemnity of \$5 per week during totally incapacitating and house-confining illness not to exceed fifty-two weeks, if the individual is 20 years of age when the policy is issued

and the insurance is made continuous until the assured reaches the age of 65 years, would seem to be warranted. At age 40, at the time of insuring, the pure premium required would seem to be about \$5.50, and at age 60, about \$9.75, assuming that interest will be compounded at $3\frac{1}{2}$ per cent.*

It will, of course, be understood that the pure premiums must be loaded to meet the expenses incident to the conduct of the business, including home office charges and agents' commissions, but obviously the rate of renewal commission to be paid should be much less than is now paid upon renewal of annual policies, because, as is the case in life insurance, the agent would have little, if anything, to do in the premises; a loading of 30 per cent. should be ample to meet all proper expenses. From the agent's standpoint, the reduced rate of commission would be more remunerative in the aggregate than the income now derived from sickness insurance, because the business would practically renew itself, so that time now employed in placing renewals could be devoted to securing new business, and the renewal interest in a continually increasing volume of business would soon afford a satisfactory income.

It is assumed to be unnecessary to go into details here respecting the profits likely to accrue to the company, but it may be broadly stated that careful selection of risks will reduce the actual pure premium required. Something may also be saved out of the expense loading, and the reversions from lapsed policies will add more or less to profit.

Present Practice

Having traversed the realm of the near future, we shall now retrace our steps, and deal with the present

*The approximate figures given afford a fair indication of what would be shown by a complete net level premium table for all ages between 20 and 60 years but since the data from which they have been drawn contains, as respects some ages between the two extremes mentioned, more or less of the element of chance due to meagre exposure, the writer prefers that they shall be regarded as tentative and subject to some correction and from this viewpoint it is thought inadvisable to consume space by introducing a complete table.

practice of companies as respects underwriting and the handling of claims. Annual policies providing \$5 weekly, while totally incapacitated and confined within the house on account of any disease originating while the policy is in force (the maximum period for which indemnity is paid being fifty-two weeks), are sold to persons between 18 and 50 years of age, for an annual premium of \$7, and to persons between 51 and 60 years of age for an annual premium of \$9. These policies provide a half-rate indemnity for a limited period of convalescence, but no indemnity is paid for any period during which a legally qualified physician is not in regular attendance.* The applicant for sickness insurance is required to state among other things his occupation, age, height, weight and residence, and to disclose to the underwriter the nature of any sickness causing incapacity for business or work that may have occurred within five years. With this data before him, the underwriter judges the physical hazard of the risk submitted to him. The application becomes a part of the contract if a policy is issued, and every statement should be carefully written in accord with the facts in the case, so that there may be no breach of warranty that might have the effect of voiding the policy in the event of a claim being made.

A policy insuring against sickness should not be issued if the applicant has suffered from or is at the time of making the application, suffering from syphilis, any organic disease of the heart, arterial sclerosis or hardening of the arteries, Bright's disease, albuminuria, dropsy, diabetes, apoplexy, paralysis, disease of the spinal cord, consumption or tuberculosis, inflammatory rheumatism, epilepsy (or fits), malignant tumor or cancer. There are a number of diseases that, while not pro-

*A few companies have introduced policies that do not conform to the general rule respecting convalescence or long continued sickness but any detailed reference to such variations would take us into the domain of company advertising; the writer has therefore referred to company prospectuses for special features that mark departures from general practice

hibitory of sickness insurance, nevertheless, should disqualify those who have suffered, unless the policies issued are endorsed so as to eliminate any liability on the part of the company for indemnity on account of illness due directly or indirectly to such cause. Some of the diseases here referred to are recurrent in character, one attack establishing a predisposition to successive attacks; others, while not in themselves recurrent, leave the individual in such physical condition that he is predisposed to other illness, and any disability is unduly prolonged. A history of any illness due to muscular rheumatism, gout, neuralgia, tonsilitis or quinsy, pleurisy, gall-stones, jaundice, varicose veins, urethral stricture, malaria within twelve months, appendicitis (unless the appendix has been removed) should call for an eliminating endorsement.

There are other matters pertaining to personal history and physical condition that are of such importance that the underwriter should constantly have them in mind in scanning an application for sickness insurance. A history of rejection by a life insurance company should put him on notice that the risk is in all probability substandard, even if, because of lapse of time since the rejection, it is urged that there was no really good ground for the rejection, and he will do well to investigate thoroughly before accepting the risk. An underweight risk should be scrutinized with great care, and this is particularly true if the individual is under 30 years of age; tuberculosis finds a majority of its victims among young adults who are underweight, and in any event such persons are slow to recover from any kind of illness, their underweight being merely one of the visible signs of a diminished vitality. Overweight, however, is a condition requiring just as much caution on the part of the underwriter. A moderate amount of overweight in a young adult may be regarded as the expression of a harmless

hyper-nutrition, but in persons over 30 years of age obesity is as a rule an indication of internal trouble, being due to causes that bring about the development of chronic organic diseases that will end in protracted illness. When the application discloses a history of appendicitis, followed by removal of the appendix not less than four months previously and the applicant is not overweight and presents no evidence of ventral or abdominal hernia at the site of the wound, the risk may be accepted without question. In overweight risks, however, and particularly if drainage has been employed by the surgeon in healing the wound after operation for appendicitis, it is better to postpone the risk for a year after the operation, after which, if no signs of hernia exist, the risk may be accepted.

Some occupations in which the individual is brought into contact with irritating particles, or gases, or with mineral or other poisons, or in which he is exposed to atmospheric conditions provocative of colds or other diseases of the respiratory organs, stand in such relation to that phase of the general subject now under consideration that the underwriter should consider himself placed upon notice when dealing with the application of one who has long been engaged in an occupation of the character referred to, and unless the personal history and physical characteristics of the individual clearly negative the presumption which is against the applicant in such cases, an investigation should be made before accepting the risk. In dealing with occupation, however, it will serve a good purpose to consider the possible influence which occupation may have had upon the moral and social, as well as the physical condition of the individual. The writer is aware that this is a refinement in underwriting that will probably not appeal immediately to many of his readers, but the medical aspect of the question emphasizes its importance. The average duration

of life is increasing, so that new tables of expectancy for life insurance companies are warranted, but the price paid for increased longevity is a large increase in the number of persons upwards of 45 years of age who suffer from alcoholism, cancer, diabetes and from diseases of the heart, liver, kidneys and stomach. Of 51,000 alcoholic patients treated at one hospital in New York City, 66 per cent. were between 30 and 49 years of age, and 75 per cent. of all chronic alcoholic patients examined at this hospital were found to have chronic diseases of the liver, heart or kidneys, while 50 per cent. had gastritis. Excessive indulgence in alcohol may be said to be incidental to some occupations, and this brings us back to the proposition that occupation has a bearing upon the moral and social condition of individuals, and indirectly causes a large amount of sickness.

Handling Sickness Claims

One of the requirements of all policies insuring against sickness, is that the policy-holder shall promptly notify the company of any sickness, on account of which a claim may be made, and insurance companies quite generally insist upon a more literal observance of this rule in respect of sickness than when dealing with claims under accident policies, because the opportunity for imposition is greater, and is moreover increased in direct proportion to the lapse of time between the date of an alleged sickness and the time at which it is reported to the company. It is the usual practice of insurance companies to respond to a notice of illness by sending the policy-holder a claim blank upon which he makes in his own behalf a detailed statement concerning the nature of his illness, the extent to which he has been prevented from following his usual occupation, the time of actual confinement to the house, and the period covered by convalescence. He is also requested to furnish the certificate of his attending

physician, because it is one of the conditions of the sickness insurance policy that indemnity shall only be paid for the period covered by regular medical attendance, and here we encounter a very difficult problem; the doctor has no personal relation with nor interest in the insurance company, but the claimant (his patient) is one of the community in which the doctor earns his income, and human nature asserting itself, the doctor resolves all doubts in favor of his patient, and prepares his certificate accordingly. The writer would not have it understood that disregard of the company's interest is the rule in the preparation of claim blanks, but it is in evidence in a considerable number of the claims handled. Some companies endeavor to overcome this difficulty by employing a physician other than the claimant's attendant to make an examination and report respecting the nature of the sickness, the extent and duration of the disability, and the probable antecedent physical condition of the claimant. But here again, the same influences are to some extent present; the claimant is not the examiner's patient, but the examiner may nevertheless regard such relation as not only desirable but one of the possibilities of the future; the claimant may become a regular contributor to the doctor's income, while the insurance company pays him a single fee of modest proportions; what is more in accord with human nature than that the examiner will O. K. the certificate of the regular medical attendant?

One of the greatest needs of sickness insurance as a business, is a corps of dependable medical examiners covering the territory in which the several companies operate. The common employment of such examiners would, perhaps, bring sufficient compensation to make them more or less independent of local support, and would result in a considerable saving in the settlement of claims.

The question of moral hazard looms up at every point

in the consideration of the general subject of sickness insurance. We have seen how important is the part which it plays in the underwriter's work, but it is in the work of the claim adjuster that the cupidity and weakness of a large percentage of those who pay sickness premiums are most potent, and it is therefore the duty of the agent to give the claim department of his company his moral and material support in the handling of claims.

It is the common practice when making settlement of a claim for sickness due to a disease of recurring character, or a disease likely to leave a troublesome sequel, to insist upon the elimination of liability on the part of the company for sickness resulting directly or indirectly from such disease, as a condition precedent to the continuation of the insurance. Some companies accomplish this by use of what is called an eliminating draft in payment of the claim; others prepare a rider or indorsement and attach it to the policy, and this is, doubtless, the better plan, but *the company should make sure that it is signed by the policy-holder, and that it is actually attached to the policy.* Thus the scope of the insurance may in course of time be considerably narrowed by a process of elimination—something that could not be done under continuous policies having no cancellation clause.

Addendum

Since preparing the foregoing, the writer's attention has been called to a valuable contribution to our knowledge of sickness in the United States, made by Mr. Francis R. Parks of Boston, who has made a study of the experience of The Loyal Protective Association, covering 56,142 risks drawn from the ranks of a fraternal organization and involving 94,489 years of exposure. Although the actual exposures for some (attained) ages were perhaps not sufficient to eliminate the element of chance, Mr. Parks has applied such reasonable tests to his data as

were available and has prepared a tentative *Net Level Premium Table* upon a 3½ per cent. basis beginning with age 20 and terminating with age 69.

Quoting from his table the net premium for an indemnity of \$5 weekly under a policy terminating at age 70 would be, at 20 years at time of insurance, \$2.85, at 40 years \$4.20 and at 60 years \$8.30. It will be noted that these net premiums are considerably lower than those suggested above by the writer as a result of his personal study of miscellaneous company experience, but it should be remembered that fraternal influence and method of handling claims as well as the methods employed in selecting the risks have probably introduced factors that are not at the command of casualty insurance companies doing a general sickness insurance business—matters which Mr. Parks appreciates and refers to in his monograph.

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CHAPTER XXXIX
INDUSTRIAL ACCIDENT AND HEALTH
INSURANCE

BY REINHOLD B. KOCH

THE study of an industry, science or profession is a study of growth and evolution, and in order to perfect one's knowledge in the line of a specific inquiry, the steps in such growth or evolution must be noted and their psychology comprehended and understood. This is particularly true in reference to insurance and especially that branch of the business coming under the title of this chapter.

The basic principle underlying all insurance is to distribute the burden of the few among the many, so that the unfortunate, if they are provident, may share in the success of the prosperous. This principle is particularly applicable to that class of persons who by reason of their situation in life, their environment, education, training and occupation, are unable to provide for themselves against misfortune, and the idea of mutual assistance, old as society itself, was early recognized, and generally practiced by the guilds of the Middle Ages. As applied specifically to protection against casual misfortune, we find it first practiced among the Friendly Societies of England, which were voluntary organizations, the members contributing either a fixed rate, or by assessment, so that those members who should be disabled were protected to the extent of a livelihood from the fund raised by the general contribution. The first illustration of this principle in the United States is found in the fraternal societies, which have prevailed with more or less permanency since the middle of the nineteenth century. The principles of protection practiced by these societies were

not and are not now scientific; and that accounts for the fact that, although fraternal organizations continue as a whole, many subordinate bodies pass out of existence, as it is the subordinate bodies which bear the burden of protection. The bodies spring up and go down with surprising regularity, due to the fact that they have not accurately reckoned the risk and have lost sight of the other and perhaps more important fact, that the average age of the member increases year by year, and that it is mathematically impossible by the addition of new members to keep the average age down.

It was not until many years after the writing of general accident and health insurance was in practice that industrial accident and health insurance was seriously considered by underwriters, and consequently this is the latest plan of personal insurance which has attracted the attention of underwriters.

The first insurance company to operate as an industrial accident and health company was organized in 1891. In that year the plan was conceived and put into operation by a gentleman who had given some attention to insurance, and the result was the organization of two companies to conduct this class of business, one in Michigan and the other in Minnesota. The popularity of the plan was soon established and immediately underwriters who had their ear to the ground adopted the plan, and today there are more than one hundred companies in the United States engaged either exclusively or principally in the industrial accident and health insurance business; and this does not take into account the many so-called fraternal and beneficial associations in the various states which are engaged in practically the same kind of business, which, from their anomalous nature are not under insurance supervision, and consequently accurate statistics of their operations are not obtainable.

During the first decade of this line of insurance, with

its many new companies springing up like mushrooms, competition became very keen, and manifested itself principally in the greed for business at whatever expense to its competitors, so that there resulted an unfair competition to secure the services of agents, it being the theory that an agent who had built up a debit could largely control the transfer of that business to any company with whom he might become allied; this practice resulted in serious injury and damage to all companies. This condition soon became apparent, and it was readily seen that the general business of industrial accident and health insurance would not be benefited by its continuance, but on the other hand, would be seriously injured, and companies engaged therein irreparably damaged.

The leading underwriters engaged in the business recognized the situation, and realizing that some steps should be taken to prevent the wholesale slaughter which was going on, consulted together, and on October 21, 1901, just ten years after the organization of the first company of the kind, by a coincidence, met at Detroit, Michigan—the state in which the original idea was proposed—and organized the Detroit Conference.

The Detroit Conference is an organization composed of the principal companies engaged in the industrial accident and health business, and its declared objects and purposes are “To promote good-will and harmony between companies, to devise measures for the protection of their common interests and to cultivate the spirit of progress in the study of health and accident underwriting.” Its membership now consists of eighty-two companies, which control ninety-five per cent. of this kind of business in the United States. It holds meetings at different places, at least twice a year, which meetings are usually well attended, and methods for the general improvement of the business are freely discussed. The

organization of the Detroit Conference and the good work it accomplished, resulted in eliminating the evils of the business which existed prior to 1901, and has almost entirely eradicated piratical methods of securing agents and business, until "twisting" is now practically unknown.

Notwithstanding the good accomplished, certain lines of competition remained open, such as fanciful provisions in policy contracts, each company vying with the others to give its agents some "talking point" in order to secure business. The result of this was the issuing of policies too liberal in their general effect for the premium charged but which contained numerous technicalities and pitfalls, enabling a company to save, by a strict construction of their policies, that which they appeared to offer in securing the business. The result of this was many abuses with consequent complaints to the various insurance departments, and at the end of the second decade of the business, in 1911, the National Convention of Insurance Commissioners, by a committee, investigated the methods employed in the adjustment of claims, this being the source from which the complaints were received. In that investigation fifteen of the principal companies were examined, with the result that many abuses were found to exist. These were denounced by the commissioners who in some instances even insisted upon the dismissal of the managers and officials who had been responsible for the conditions which they discovered.

When industrial health and accident insurance first engaged the attention of underwriters, there were no satisfactory statistics upon which to base their calculations as to the cost of the risk. The experience of the fraternal associations in this country was not satisfactory or sufficiently scientific, and the experience of the Friendly Societies of England was but little more so. The best statistics that were compiled were the so-called

Manchester Unity Tables, but these were soon found inapplicable to the conditions existing in this country. Consequently the first policies were necessarily crude and incomplete.

The primary object of this sort of protection was and should be, to provide an income to the wage-earner when his wages are cut off by unfortuitous circumstances. The principal object of the first underwriters seemed to be the production of something that could be sold. Therefore, in order to furnish a marketable commodity they sought to issue a policy at a popular price and the almost universal price was \$1.00 per month. The attempt was made to confine the benefits promised to what a dollar would pay for, but lack of experience made it practically impossible to determine with any degree of accuracy just what could be promised for such a premium, having in mind the great diversity in the occupations and habits of the insured; and as the competition increased, greater and more fanciful promises were made until the policy became more of a literary and insurance monstrosity than the product of scientific underwriting. As one company would add a liberal provision to its policy, the other companies would try to outdo it, until finally the policies were so prepared that it would require a mathematician to determine what, if anything, a policyholder was entitled to in case of a claim. The policy would provide for a certain amount of indemnity in case of accident or sickness, then in some hidden clause there would be a provision that only a fraction of the amount promised would be payable under certain conditions and a different fraction under slightly different conditions, and so on, until a study of the policy forms in general led one into a maze from which he was only able to extricate himself by giving the matter up in disgust. This condition existed until within a very few years, when by the aid of accumulated experience, the disadvantage and unde-

sirability of these added curiosities became apparent and it was soon demonstrated that the companies must prevent the loss which a liberal construction of such policies would entail. This was attempted by cutting down the claims and refusing payment on the slightest technicality.

None of the companies, however, departed from certain basic principles, such as imposing an age limit within which the policies would be issued and at which the policies would expire. In order to provide against the moral risk, the policies universally reserved the right to the company to cancel, without prejudice to any existing claim. For the same reason, accident policies required the injuries to be suffered by external, violent and accidental means, and in case of sickness required that the insured should be confined within the house and subject to a physician's attendance; the policies required notices of disability within periods varying from five to twenty days; they required that proofs of disablement should be furnished within a specific time; they reserved the right of an examination of the insured in case of a claim, all of which provisions were found to be reasonable and necessary. At first the policies provided indemnity in case of sickness from the beginning, but later this was found to be unsafe, and the first week was excluded, unless an extra premium therefor were paid.

Within the last few years, the companies have become more attached to the original purpose of this insurance, viz.: the providing of an income in case of disability, and have found that that sort of protection can be sold without regard to a "popular" premium. In other words, that the insured is willing to pay what it is reasonably worth to have protection against loss of income, even though the premium be more than the so-called popular premium of \$1.00 per month. During the last three years, various states have demanded legislation providing standard provisions for accident and health insurance

and such provisions are now in force in ten states; generally speaking these laws are applicable to industrial as well as to commercial policies. These provisions are that the policy and its endorsements shall constitute the entire contract except as affected by tables of rates and classifications of risks filed with the insurance departments; that no statement made by the applicant not endorsed on the policy shall affect it; that notice of accident may be given within twenty days, and of sickness within ten days, unless such notice shall be shown not to have been reasonably possible; that notice either to the home office or an authorized agent, shall be sufficient; that the acceptance of a past due premium shall reinstate the policy immediately as to accident, and after ten days as to sickness; that in case of a change of occupation, permanent or temporary, to a more hazardous one, indemnities shall be paid in such proportion as the premium in such more hazardous occupation would purchase; a provision that benefits shall be paid within sixty days after receipt of proofs; a provision that the policy may be cancelled without prejudice to claims for existing disability; and a provision requiring proofs not less than ninety days from the death or termination of disability.

The ideal policy of industrial accident and health insurance is one which in plain terms provides definite benefits to take the place of wages or income in case of disability and guarantees a decent burial in case of death, whether death be due to accidental or natural causes. Such a policy is the only one consistent with the purpose of the business, and it should be written without any fancy provisions. The insured should know that when he is actually and honestly disabled he will have an income so long as he pays his premium, and the indemnity should either be reduced to conform to the premium paid or the premium should be increased so as to provide sufficient indemnity under such a plan. Perhaps the only departure from this

sort of policy, or the only improvement thereon, would be a policy which would become paid-up at the end of a certain period, so that the insured would have protection for disability during his entire life, paid for during his productive years.

As previously mentioned, the rate originally charged for industrial insurance of this kind was uniformly \$1.00 per month, and, therefore, the science of the business was involved in the classification of risks or occupations. Several elements enter into this matter, such as environment, habits, hazard and moral risk of the occupations, and the various occupations have been classified into as many as eight classes, and the rate of indemnity provided in the policies is varied in each class. Generally speaking, the highest class consists of merchants, professional men and those employed in clerical occupations. The next general classification consists of skilled mechanics, after which comes common laborers, and finally the more hazardous occupations, such as persons engaged in underground work, railroad employees, electric linemen, etc. Some occupations have been held to be entirely uninsurable. The classification of occupations will always be the primary principle of this business as that is really the measure of the risk, but the premium will become elastic and is fast reaching that point, so that although the same amount of money will not purchase the same amount of indemnity for all classes, yet within the limit of the moral risk all classes will be entitled to the same indemnity by paying a proportionate premium therefor.

From what has been said, it can readily be seen that the industrial accident and health insurance business, though twenty years old, is still in its infancy. The possibilities of the business no man can foresee, but that it is to become a matter of vital importance in our social and economic life is shown by the constant agitation of workmen's compensation laws. We are often referred

to the laws on this subject in force in Germany. The experience of the German government compulsory insurance system, however, has not been satisfactory, and in this country where politics play so large a part in all government activities it would be more certain of unsatisfactory results than in the German empire.

The true solution of the situation lies in the education of the individual to provide for himself by laying up during his years of productive energy against loss of income, and when companies shall have finally settled the questions which are still open and shall have arrived at a basis of safe and sane protection so that the individual may feel that he is getting an honest quid pro quo, we will have advanced the interests of both insurer and insured more certainly than by years of agitation or demagogic legislation. This is the special field for the industrial health and accident companies to cultivate and as they are becoming year by year more fully imbued with this spirit, it is only a question of time, and that in the opinion of the writer, a very short time, when a man who is an underwriter in this branch of insurance activity will be looked upon not only as a sagacious business man, but a general benefactor.

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CHAPTER XL
WORKMEN'S COLLECTIVE INSURANCE
By CHARLES H. FRANKLIN

WORKMEN'S collective insurance is the accident insurance of a number of workmen collectively under one policy, as contrasted with the individual policy for each man. In other words, it is the personal accident insurance of workmen by wholesale instead of by retail.

This class of insurance was started in England about the year 1882, and was first called "Joint Insurance," as the insurance of the employer for his employers' liability and the insurance of the workmen was issued under one policy, and therefore the employer and his workmen were "jointly" insured. At first the premium was calculated at so much per man employed, but it was soon discovered that this was impossible as the men were constantly changing. Then instead of having the names of all the men covered, it was decided to charge upon the number of men employed but it was found that this system would not work as the number was constantly changing, and at last a premium rate on the wage roll was adopted and was found to work satisfactorily.

In the United States the workmen's collective insurance is covered under a separate policy.

The benefits under this class of insurance are:

(a) In the event of death within ninety days from the date of the accident, a sum equal to, but not exceeding one year's wages, limited to \$1,500.

(b) For the loss of two limbs or two eyes, a sum equal to the amount payable under the policy at death.

(c) For the loss of one limb, a sum equal to one-third the amount payable under the policy at death.

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(d) For the loss of one eye, a sum equal to one-eighth the amount payable under the policy at death.

(e) In the event of temporary total disability, a sum equal to but not exceeding one-half the weekly wages for a period not exceeding twenty-six weeks, such sum not to exceed \$750 in respect to any one person injured during the policy year.

The usual rates are for the foregoing benefits only, covering accidents of occupation during working hours only.

If the benefits under clauses (a), (b), and (c) be reduced one-half, the rate is 15 per cent. less.

Workmen's collective policies are also written to cover the whole twenty-four hours, *i. e.*, the exposure of the workman to accidents while away from work as well as the hazard of his occupation. The additional charge for such a policy is 15 per cent.

If full medical attendance is desired, 30 per cent. of the full rates is added, whether the death benefit is one year's or one-half year's wages, save only that if the full twenty-four hours are covered, 37½ per cent. is added.

When an employers' liability and a workmen's collective policy are written concurrently on the same risk, and both premiums are paid fully in advance, a reduction of 10 per cent. may be made on the employers' liability rate. On any workmen's collective policy a commission of 5 per cent. may be paid to the employer for collecting the premium.

A few workmen's collective policies have been issued without a concurrent employers' liability policy, but as a rule the two are issued together, and it has been found that the covering of the men under the workmen's collective policy has had a favorable effect upon the experience under the employers' liability policy.

The premium is based upon the amount of the wage roll of the workmen covered, and varies from 1 per cent.

upwards, the highest rates being about 4 per cent. or 5 per cent. In some instances the employer pays the whole premium, in other cases the employer pays a certain proportion, say one-half, and the workmen pay the balance, a certain sum being deducted from their wages on each pay day. Again, in other cases the workmen pay the whole of the premium to the employer, who pays it to the insurance company.

The total premium income on this class of business is comparatively small, under \$1,000,000 a year all told, whereas the liability premium income amounted to nearly \$30,000,000 for the year 1910.

As regards the extra charge for full medical attendance, this is very rarely covered as the employer usually is able to make better arrangements with a doctor direct than an insurance company can, and, moreover, it is better that it should be so as doctors are far more reasonable in their charges when dealing with an employer directly than when they know an insurance company is behind the employer and ultimately pays the bill.

The question of doctor's bills is a serious one in all lines of casualty insurance, as the very erroneous idea which is current amongst all classes and conditions of the public that insurance companies are fountains of untold wealth, has unfortunately spread to doctors, and they are not slow to appreciate and approve the idea, as is natural. Years ago a doctor would accept a contract to attend the workmen at a certain plant, and would attend to them, and the contract covered practically all the doctor's attendance, unless there were some very important operation which one could not reasonably expect the doctor to perform without assistance; but nowadays, in the first place, it is very difficult to obtain doctors under contracts. In many places they have associations which bind them not to accept any contract of this description, and this feeling amongst doctors against accepting work under



contract prevails not only in this country but shows itself strongly in England and Germany. However, assuming that a contract has been arranged with a doctor, even then it is perfectly astonishing what a large number of matters apparently come outside of the contract and which, so far as my experience goes, no doctor will include in his contract. These are: fees for specialists of all descriptions,—eye, ear, nose, mouth, throat, heart, etc.; fees for consulting or assisting doctors whenever required; x-ray photographs; ambulance charges; operating room charges; fees for nurses; and charges of the hospital for nursing, medicine, and board, as most hospitals of the modern type render a bill for everything done, having naturally acquired the same wrong idea as the doctors on this subject.

All this shows that the question of medical attendance is a most serious one in connection with workmen's collective business, and there is a constant tendency to increased cost in this respect.

Some of the reasons why this workmen's collective insurance has not assumed greater importance are not hard to find, but there are other reasons which are not so plain and which are still more important. The insurance companies have not, except during the last two or three years, pushed this business, and in those cases in which employers and workmen have been canvassed to take such insurance it has often been felt that the premium rate was too high, particularly in comparison with the premiums charged by friendly societies and industrial insurance, assessment and stock companies. However, in adopting this view both employers and employees do not take into account, as a rule, the difference between the policies. A workmen's collective policy is one of the broadest contracts offered to the public, whereas many of the cheaper forms of insurance are anything but broad.

The larger proportion of the workmen's collective in-

insurance now in force is carried in plants in which they have had the benefit of this system of insurance for the past ten years or more. It is in such plants where the workmen have realized the benefit of workmen's collective insurance that it is continued without trouble, as the new workmen joining the force are influenced by their comrades, who, having already worked in the plant, know and appreciate the advantages of collective insurance. However, even in those cases it is practically impossible to alter the policy in any way, even if it were to increase the benefits paid to the employees, as, apparently, the workmen look with very grave suspicion upon the slightest alteration in anything which they have known in the past and which has worked satisfactorily.

Moreover, if a policy for any reason is once dropped, it is almost impossible to reinstate it, and new business is exceedingly difficult to obtain. It may be a matter for great surprise that this should be the case, but there is no doubt that workmen's collective insurance is small in volume, that new business is practically impossible to obtain, and that if a policy is once lost, that insurance is to all intents and purposes lost forever.

To show how difficult it is to obtain new collective insurance of workmen, the case may be cited of one company which drafted a policy on broad lines for the insurance of sickness, giving half wages for twenty-six weeks in case of disability. The policy was undoubtedly highly advantageous for the men but it was found impossible to write the business, and the policy was withdrawn.

Workmen's collective insurance has been and is, without doubt, of very great advantage to workmen, giving them, on the occurrence of any disability arising from accident, half wages without any question as to liability, the half wages being paid automatically. The wonder is that there is not a workmen's collective policy on almost every plant in the United States, but instead of being the

rule it is the exception. The reason for this may be summed up in one word, "Unions," and, perhaps, according to their point of view they may be right in their opposition to workmen's collective insurance. Workmen's collective insurance makes contented workmen, and perhaps contentment is objected to as being fundamentally opposed to progress. Further, many unions have insurance funds of their own, and it is only natural for the union leaders to expect the members to contribute to those funds instead of to workmen's collective insurance, particularly as it increases the power of the union over the workmen. Workmen's collective insurance tends to make the workmen independent.

As an instance of how far the opposition to workmen's collective insurance will go, a case may be cited in which a workmen's collective insurance had been arranged, one-half the premium to be paid by the employer and one-half by the employees. The day before the policy was to go into force a strike was threatened if this scheme of insurance was not abandoned, and of course it was abandoned.

There may be another reason why the unions object to workmen's collective insurance, namely, that only half wages are paid, and, apparently, from the position taken by them in New York under the Workmen's Compensation Act, they will not be satisfied with anything less than full wages in case of disability from accident.

If the idea of workmen's compensation is found to be constitutional and becomes law in many of the states, then the workmen's collective insurance will naturally terminate. This is so because it does not appeal to insurance men as being fundamentally correct to insure for the full amount of wages during disability by accident, and if an injured man received at least half his usual wages under a Workmen's Compensation Act and received half wages under a workmen's collective policy, he would be receiving at least his full wages. If in addition he carried

an industrial accident and health policy, or was insured with some fraternal society, he would be receiving more money while he was away from work than while he worked, and such a condition of affairs would manifestly be very difficult to handle.

Workmen's collective insurance is one of the best classes of accident insurance offered to the public, and it is a matter of great regret that it is not more popular. It is of advantage to the workman by giving him money just when he needs it, and it is of advantage to the employer by giving him a contented force of workmen; and it may be said generally that where workmen's collective insurance has been carried, strikes have been less frequent and there is better feeling among the men.

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CHAPTER XLI
ACCIDENT PREVENTION
BY WILLIAM H. TOLMAN

WHATEVER tends to maintain the wage-earning efficiency of the worker and the health of the general public, I shall consider to be a safety device. In this sense some are of wide application, while others concern a narrow group, but all form a distinct part of an effort making for greater safety for the community—a community which does not, it is true, labor continuously in factory, mill or shop, but one which must always come and go from its work and its pleasure, and which in so doing is subjected to many dangers. Particularly is this true in the city, which is teeming with potential accidents—not only to those who ride but to the pedestrian as well, who may be crushed from above, crippled by obstructions in his way, or hurled into excavations.

The general public is as a rule left to its own devices as far as its personal safety is concerned, and the busy city person, in his occasional moods of contemplation, must sometimes wonder what he should do if he were overtaken on the street by a stroke of illness or an accident. Would he be at the tender mercy of the passer-by, how long would it take to get a doctor, and could he have skilled attendance?—the skilled attendance which would be at his service were he similarly overcome in some of the old world cities.

For example, should our contemplative American be in that cosmopolitan capital, Berlin, he would very soon discover a provision of accident stations, as they are called, located in ordinary rented rooms, on the ground floors and opening on the street. They are usually distinguished at night by a transparent glass lantern bearing

the sign of the Red Cross. The addresses of these stations are also to be found on the advertising pillars or kiosques, scattered throughout the city.

The staff consists of a physician and an assistant, doing service in turn. The stations are furnished with necessary first aid equipment, stretchers, ambulance wagons, and all necessary supplies. They undertake the ordering of ambulances from headquarters and making inquiries at the various hospitals, for vacant beds.

These stations render assistance to the rich and poor alike, at any time of day or night. The poor receive help free of charge, but others able to make remuneration for the services given, are expected to do so. Persons in an unconscious state, the intoxicated and maniacs are looked after until they can be removed to suitable places. The stations can be easily turned into relief centres in case of an epidemic, where sickness can be more successfully combated. They would also be very useful in time of war.

At first they were principally useful as bureaus of information, where the address of available physicians and surgeons could be obtained. Now, however, nearly all of them are connected with the Red Cross Accident Stations, so that the rooms occupied by the latter organizations during the day, are used at night by the Berlin Sanitary Stations.

The first of these was founded at the suggestion of Her Majesty, Empress Augusta, in 1871. Their present object, under the patronage of Her Majesty, the Empress, is to render medical aid at any time of the night to persons who are in need of such assistance. There are now fourteen sanitary stations throughout the city.

At present, the funds to maintain them are gathered from various resources. The fees from members of the society and the fees for attendance and relief are augmented by collections from house to house, free donations,

and profits from charity bazaars and similar entertainments, as well as district subsidies. The cost of maintaining one of these stations is from \$1,250 to \$1,500 annually.

Closely connected with the accident stations is the ambulance headquarters of the Society for the First Aid founded in Berlin in 1904, for the purpose of improving the means of rescue and relief in cases of accident and sickness. The ambulance section came a year later. At present, there are the main depot and two branches, with twenty ambulance wagons, three salon wagons, two salon wagons for children and a motor car, besides thirty horses always ready and available for the transportation of patients.

The main depot has telephonic connection with the others, the office of the chief of police, and the various city hospitals in order to facilitate the finding of vacant beds. Each depot has its own disinfecting apparatus, bathrooms, inspectors' apartments, general offices and stables.

The disinfecting wagons, stretchers and other parts of the equipment every time after use, are thoroughly disinfected in special premises, consisting of the disinfecting and the heating room known respectively, as the "impure" and the "clean" room. Between these rooms is the special steam apparatus for disinfecting, and the boiler for washing linen, so arranged that the infectious articles put into the apparatus from the "impure" side, are taken out clean and disinfected on the other side. All persons who have been engaged in the work of disinfection, as well as the coachman and assistants who have handled patients, are obliged to take a special shower bath. Those members of the staff employed in the "impure" and the "clean" sections are allowed to communicate with each other only by telephone.

The ambulance wagons have been constructed with

smooth and rounded corners on the interior; windows in the sides are made fast and where the panes of glass are set in the frames have been chamfered; ventilation is obtained through removable windows in the front; white enamel is everywhere. The wagons are scrubbed and brushed most thoroughly with hot antiseptic solutions after which they are rinsed with fresh water and dried with clean towels. The time required for disinfecting a wagon after use is twenty minutes. The linen, towels and clothing of the assistants are disinfected each time in the sterilizing apparatus already described.

With the increasing attention given to preventive methods by the doctors of the present—particularly as they affect the health of children—hygienists, teachers and the medical profession will be attracted by any method for preventing the insidious advance of disease or other disabling conditions, which take away the wage-earning capacity of the laborer or threaten the general health of the community through communicability. A very practical and inexpensive device for public safety, is the open-air school, which the writer studied in Charlottenburg, a suburb of Berlin. This is a forest school in the open, for the physical as well as mental benefit of the pupils, who, on account of insufficient vitality, constitutional diseases and tubercular tendencies, are unable to hold their own in the regular public schools with their large classes and many hours of school work. The forest school is intended to improve the health of these children by giving them eight months' school work in the forest air, simple but nourishing food, regular care of the body and the teeth, with plenty of play and rest.

The forest school is controlled by the school board of Charlottenburg. Food and household administration are supplied the children at actual cost price, by the Women's Patriotic League which has also provided the household barracks free of expense. The housekeeper, a Sister of

Mercy, looks after the bathing and weighing of the children. A regular physician is attached to the school, also the necessary staff of teachers. The children are selected from the public schools by their class teacher and principal and recommended to the board of education, but the physician of the forest school decides whether or not they shall be received.

Beyond doubt, one of the most important safety devices which will protect the public from the impairment of health and efficiency, is a street cleaning department, which is more than a name. The writer feels strongly on this subject; for in the city where he lives, he is obliged to take a street car from his home to the subway, in order to escape the flying dust from the street, saturated with filth and disease germs. In the matter of street cleaning, Germany is fast deserving the encomium of the "Prepared Nation." Nothing is left to chance, but after careful deliberation, well matured plans are set in motion. In the matter of public health, the German cities consider that the cleaning of the streets is of prime importance. The street cleaning department is virtually a sanitary army, waging daily war against the filth and dirt of highway, street and alley. The streets are literally washed and scrubbed. "I wish we could have a three days' rain," remarked a Brooklyn woman in my hearing. "Why?" was asked. "Then our streets would be clean!"

The headquarters of Berlin's army of sanitation is at 68 Kloster Strasse, with four sub-stations and thirty-three inspection depots. The divisions of the army include 105 foremen, 1,400 workmen and 529 apprentices; there are sweeping and washing machines, driven by electricity and by hand; automobile water-carts, in addition to the more plebeian equipment of brooms, shovels and spades. The asphalt and wood pavements are cleaned by sweeping and washing machines with rubber rollers. Machine and hand work is employed on the stone

pavements; sprinkling of streets is generous. The asphalted streets are sprinkled during the day with water to which a certain oil has been added.

To promote the safety and health of their workmen, the Association of French Employers to Prevent Industrial Accidents was organized in 1883 in Paris, where its first activities centered, but its action was so beneficial that to-day it has sections in every department of France. The association has its own inspectors for the examination of the members' plants and, in consultation with employers, suggests such measures of safety, as can be applied with the least inconvenience to the work in hand, and the least expense. These inspectors are safety engineers. Membership fees in the society are based on the number of workmen employed in an individual mill or factory.

The object of the association is, first, a prevention of accidents in the use of machines, in physical or chemical operations, and in the various shops where structural work is done. Second, seeking the most effective means of tabulating for instant reference the successful experience of the members and placing it at the disposal of others, such as the periodical inspection of their factories and workshops; communicating efficient methods of protecting the workmen, by indicating the best rules for their regulation and by publications concerning the law and its operation on industrial matters. Third, to recompense by prizes or other awards, those who, by the invention of appliances, by any new process or by the practical application of any device in their own factory, have contributed to the lessening of accidents and the best sanitation of their factories and workshops.

The chief advantages of membership are found in the reducing of industrial accidents by some 40 per cent., promoting the security of the workers and the tranquility of the proprietor; the creation in favor of the employer, of presumptive evidence that his caution and foresight

will tend to a more favorable consideration of the accident case when brought into court; a progressive lowering of accident insurance premiums, resulting from the lessened risk of accidents. Many of its pamphlets on special trades have passed through several editions. Frequent circulars inform the members of the text of the new laws with observations and the conclusions of the legal committee on the law in question. It also furnishes to its members posters for use in work rooms, regarding the use of dangerous machinery, with precautionary measures.

Along very similar lines in 1894 the Association of Italian Employers for the Prevention of Industrial Accidents was organized. Its scope is far reaching, including for its object the study of questions relating to the security of workmen during their labor; encouraging and devising solutions of labor questions and preventing avoidable accidents by means of periodical inspection of factories and workshops; technical devices indicating the most approved methods for safeguarding the life and limb of the workers; communications of special regulations in each branch of industry; publications on the subject of prevention; collections of designs and appliances to be placed at the disposal of the members; encouragement in every form for developing a sentiment leading to every possible safeguard, and also the designing of new apparatus.

Once each year, and as often as may be necessary, the members of the association are visited by the inspectors. A detailed report is made after each inspection and sent, signed by the engineer-in-chief, to the interested firm. Each of these reports, which summarize the suggestions and advice for improving the conditions of the employed and the security of the establishment, is then indexed and so numbered that only the chief inspector knows to which establishment reference is made. A copy of the report is

kept in the archives of the association and they are almost always accompanied by the designs of the appliances which are suggested.

Considered in the light of efficiency promotion, alcoholism can hardly be denominated a safety device. Its excessive use by the worker is a grave menace to his shop mates and to the community as well.

Alcoholism strikes at the workman in his professional capacity. It renders him less active and less skillful; it leads to and increases laxity and bad work; it is a prolific cause of accidents in labor, increasing not only their frequency but the gravity of their results.

Machinery of to-day exacts from the workman his continual attention, a watchfulness keen and sure, an ability that calls into play all his faculties. It is necessary that he should enter upon his work with a clear mind, and a mastery of himself that he can never have, if addicted to the use of strong liquors. It is, therefore, to the interest of both the chief of the industry and the workman to fight with all their might against their redoubtable enemy. The chief reasons for industrial sobriety are to prevent accidents and to assure a higher grade of work and stricter economy.

The saloon's attraction for the ignorant workman, fatigued by his day's labor is perhaps the most powerful. He is little prepared to care for intellectual pleasures, and if he were, they frequently cost him more than he can afford. The saloon offers him a great deal for a small amount of money, giving him some moments of comfort, happiness and even gayety, that make the world appear a little less unfriendly to him.

The French industrialists have come to realize this and are eliminating its evils by substitution or preventive measures varied to suit local conditions. One method is acquainting the workman with the danger of the habitual consumption of liquor, and special instruction so that he

may realize the gravity of its danger. The counsel is given frequently by the heads of the factory, consisting of sound advice perhaps illustrated by pictures of physiological disorders that have resulted from the use of alcohol and scenes of misery in the homes touched by this evil.

The mention of Russia does not evoke a mental picture of a country striving to lessen the consumption of alcohol, yet such is the case.

Temperance committees form a large part of the great reform undertaken by Russia for lessening the abuse of drink. A monopoly of alcohol regulated the sale of intoxicating liquors, but, while frequently eliminating the old saloon, it suppressed, at the same time, the only place for social intercourse that existed in a village. It was necessary, then, to fill up this gap; and this necessitated the creation of a series of institutions which could provide instruction and pleasure for the people, in diverting their thoughts from the saloon. Temperance committees, therefore, have for their objects;—to watch over the sale of alcoholic liquors in order that they may conform to regulations for the health and morality of the population; to instruct the people in a knowledge of the danger from excess in the use of spirituous liquors; to furnish opportunities for social pleasure away from the saloons by the building of social centres, floating restaurants, tea-houses, lecture halls; and the organizing of popular festivals and lectures, and establishing houses of retreat for drunkards. The committees may also lend their assistance to private societies of the same nature. These committees have materially lessened the consumption of alcohol, and, to that extent, contributed to the safety of the community.

To advise concerning the creation of organizations which tend to improve the conditions of the wage-earners, is the object of the Central Bureau of Advice in Amster-

dam, now in its eleventh year. The committee on mills and factories is the main factor for inculcating ideas of safety and caution. Notable work is being done by the bureau in its practical suggestions along lines of improved housing for the workmen.

By invitation of the late Georges Picot, the writer attended one of the annual labor festivals in Paris. The setting was the great hall of the Civil Engineers; on the platform were distinguished officials of the government and the élite of the industrialists. The president of the republic was personally represented. Parents, relatives, and friends crowded the hall. The object of the society which gave the festival is the improvement of the conditions of the child workers and apprentices, by all means that protect the freedom of the employer and the authority of the father of the family. Through diplomas, special mention, awards, medals of gold, silver and bronze, those deserving this distinction are publicly recompensed at these annual labor festivals when the eyes of France are on the beneficiaries.

One series of awards included industrialists solicitous for the moral and material well-being of their apprentices and young workers, in the form of betterment schemes to secure safety and the best sanitation in the factories and workshops, with general, as well as special instruction, and watchfulness for the morals of the workers.

The presiding officer called the name of Monsieur Laine, an associate in the firm of Ed. Laine & Co., of Beauvais; he was particularly interested in the Mutual Aid Society in the factory, which he started in 1892, and has also installed a medical service; simple talks on hygiene, first aid to the injured, and the purchase and preparation of the most nutritious foodstuffs are given to their employees. A restaurant in the factory, and a co-operative society are among his other foundations. This firm makes special grants to the Society for Im-

proved Dwellings, so that the workmen may have an opportunity to bring up their children under the best conditions. For his active interest in these betterment institutions, Monsieur Laine was honored by the silver medal of the society.

Foremen and forewomen showing a high degree of intelligence and devotion towards the children entrusted to their care, received altogether some seventy-five awards. A gold medal was given to Monsieur Douselance, who had completed forty-two years of service with the same firm, to which he had come as an apprentice and workman; he was honored on account of his kindly personal interest in the workers under him.

An important class of awards concerned apprentices nominated by their employers, societies, professional schools and local commissions for their ability and good conduct. The prizes in their class were credits in saving banks of \$2 to \$3 each. " Mlle. Fremaux, apprenticed for the third year with a firm of spinners of wool and cotton, followed with profit sewing lessons given in the establishment, is making good progress and will become one of the best work women. She is the eldest of five children and helps in the support of her parents with filial devotion. Award of a credit of \$3 in the Fund for Savings."

" MM. Boas, Roderiques & Co. make use of the most improved safety devices; they never install a new machine without being sure that they have safeguarded every point of danger. This firm is characterized by great solicitude for the welfare of the women workers and apprentices." Their award was a gold medal.

A gold medal was given to Dr. Detourbe, the inventor of spectacles and respiratory mask to protect the worker from breathing noxious dust; he earnestly devotes himself to the study of safety devices from the point of view of sanitation.

In America safety and caution are not popular. " Why

should I be careful? I have never been hurt yet," says the man whose experience should make him respect the potential danger of machines and processes, yet he may be the very one to be the next victim of his own bravado and folly. He may be indifferent to his own safety, but he has no right through this carelessness and indifference to deprive the family of his support in case of his disablement, nor at the same time to imperil his fellow workmen who may be affected by the accident.

Another class is the green, unskilled worker who enters upon his industrial life without a knowledge of the perils and risks he is to encounter. Both these classes should be "shown;" they need to see the wheels and cogs actually revolve, so that the danger may be visualized; then is borne in upon them, the necessity for caution and safety. But where shall they go for such a practical demonstration; the employer cannot do it for the community, he may not do it even for his own people. It is again the case of what is everybody's business is nobody's business.

To do all this and more too, the last decade has seen the establishment of Museums of Safety, where, employers, workmen and the public may go to learn in actual operation, or by means of models, the simplest and best methods of protecting the dangerous parts of machines or processes, so as to safeguard the lives and limbs of the workmen. The fourteenth such world institution and the first in America has been opened in the Engineering Societies' Building, 29 West 39th Street, New York City.

While the museum is primarily for the education of the employer and the employee, in pointing out to the former what safety devices he should install, and showing the latter how to use them when provided, there is another important function in the inculcation of safety and caution upon the community. Impairment of the wage-earning efficiency of the individual entails a social

obligation through the provision and maintenance of the hospital, with its first aid, ambulance and other service; the children of the injured man may be compelled to leave school for work; charity must intervene to provide for the relief of dependent relatives. All this means an increased burden on the municipal departments of charity, health and police.

The object, therefore, of the American Museum of Safety is the realization of the highest idea of conservation, namely, the conservation of human life. The museum is a clearing house for every worthy device, every worthy thought for safety and a stimulus for inventions of new safety devices. Its estimated result is a saving of 50 per cent. of preventable industrial accidents through its permanent exposition of safety appliances for protecting machines and dangerous processes in connection with—

Motors: Systems of transmission, machines in operation.

Elevators: Hoists, cranes, derricks.

Steam boilers: Fittings, cooking apparatus.

Explosives: Powder, dynamite, etc.

Fire: Burns and scalds from acids, gases, vapors.

Collapses: Scaffolding and building.

Falls: Ladders, stairways and openings.

Loading and unloading: By hand and while carrying.

Vehicular transportation.

Railway transportation.

Marine transportation.

Aerial transportation.

Accidents through animals: Riding.

Hand implements and simple tools.

Miscellaneous.

Department of sanitation.

For example, the public, at least that part of it which must pass under them, is vitally concerned in the safety

of scaffoldings, for our cities are being superimposed enormously.

In an endeavor to lessen the risks, incident to men working at even a moderate elevation above the ground during construction work, builders have constructed platforms or scaffolding to make the workmen's footing more secure, but despite these precautions, which in some cases have resulted in the erection of a perfect forest of timbers supporting the scaffolding, the list of casualties has been great. The introduction of the sky-scraper is responsible for this largely. In five years in New York alone 660 deaths were caused by falls from the old form of wooden scaffolds supported by horses and cantilevers. Since the introduction of a new form of scaffold, there have been no fatal accidents where it has been used, although in the last two years 319 buildings were erected with its aid, where 8,265 men were employed and not one man was injured.

The scaffold is interrupted so as to make sections ten feet long. At the ends of each is a pair of winches secured to a horizontal steel beam serving to support the planks. The winches are composed of a drum around which wire rope is roved, and the necessary supporting members. The upper end of the wire rope is secured to a steel outrigger by an anchor bolt thus serving to support the scaffold. To the drums are secured ratchet wheels. A lever actuates a pawl, which in turn raises or lowers the scaffold by means of the ratchets that serve to turn the drum which winds up the cables. As the sections are small, one man can raise his section very quickly by a few strokes of the four levers at each corner. The speed is very considerable. Moreover, the workman can operate the platform in sections, which is often important when material does not arrive, or where the outline of the building is irregular.

Safety at sea surely concerns the increasing number

of travelers to and fro on the Trans-Atlantic lines. Instinctively, the ocean passenger queries, "In case of accident, will those life boats work; can they be lowered quickly and safely?"

The danger factor is lessened through a device by means of which two men can lower the life boat, filled with people, from the deck to the water within two minutes, a conservative time limit. It has been claimed that it has been lowered in considerably less than one minute, but this test was made under the most favorable conditions. Another interesting feature is the introduction of a new life preserver, made of wood instead of cork. Cork is known to absorb water after being immersed a certain number of hours, and loses its efficiency. The wood is chemically treated so as to prevent such absorption, and is lighter and of greater buoyancy than cork and of lesser bulk.

Many fires and explosions occasioned by gasoline and other volatile liquids may be due to causes of which the public is little aware, and from causes which at first would seem inexplicable. There are certain atmospheric conditions in which when the temperature is right, many elements are able to throw off a spark of static energy; for instance, a metallic funnel is in a proper condition to form an electrode, if there is the right mixture of air and hydrocarbon gas. If the container of these volatile liquids is provided with a safety device, an explosion can be prevented. At the museum is a collection of safety devices in this class, for the safe storage and the prevention of fires from volatile liquids.

On first thought it might not be apparent how a safety shoe for horses could affect the factor of human safety. The snow was gently falling, covering the city streets with a soft white blanket; the peacefulness of the scene was marred by the struggles of horses vainly trying to keep their hold on the icy streets. A trolley car, making

its way slowly down the avenue came to a stop; the motor man saw a heavy truck coming towards him drawn by two powerful horses struggling to keep their foothold. Passengers were craning their neck and asking, "Why are we stopping?" Crash! Bang, smash! followed by splintering wood and shivering glass, as the pole of the truck smashed into the front platform of the car; down went the slipping horses in a heap.

In the American Museum of Safety an ingeniously devised emergency chain overshoe for horses, is exhibited in the section of transportation. The safety overshoe would have prevented this accident and others like it. In this particular case, the motorman, although showered by falling glass, fortunately was not hurt; had the car in motion met the truck, serious accident would have resulted to the passengers.

It is now a recognized fact that we are on the eve of great changes, to be brought about through a research and the application of scientific methods in the prevention of accidents in our country. Gradually the public is awakening to the necessity of such action, which will be accomplished through museums of safety and organizations for the promotion of wider knowledge and information. All this means a great educational work, which is bound to be included in the courses of study in our common schools and colleges. Foreign countries are already doing this and America, too, will see the wisdom of adopting such procedure in her own institutions. This is a mere question of time, but it is inevitable if the United States is to be made safer for life and labor.

"John won't want me now," was the recent pathetic cry of a young woman in a factory as she fell to the floor, her right arm wrenched off at the shoulder through the unguarded machine at which she was working. It was on the eve of her marriage. "John can't afford to marry a woman who is no helpmate to him."

A few years ago we were considered visionary in our advocacy of safety devices, greater caution and the sanctity of human life; but I am glad to state that at last we are awakening to the importance of this great humanitarian subject—a subject that has come to stay for all time, and as a right. It is our duty to surround, with every possible safeguard, the toiler who makes the wealth of the nation, and to protect his life and health while at work.

We should go still further in providing greater safety for the public; the man in the street; the man on his travels; the man in his home. This does not alone apply to safety devices, but to sanitation, clean streets, less noise, pure food stuffs, pure air, light and water—the essentials of health.

The time has passed in which it is necessary to philosophize merely and to discuss only, these vital problems in the United States. The thoughtful citizenship of the land is demanding constructive action. In our efforts to provide a practical system of compensation for injury we came up against a dead wall. It was found that compensation was not the solution, but prevention struck at the root of the whole evil.

Although the awakening has come, the field for activity is so great that it needs continuous application and a well organized propaganda throughout the country. Do not make the mistake of thinking this can be done in a month, or in a year; it should be a continuous influence, there should never be any let-up; it is such a mighty subject that it must become part of our educational system. At present we are dependent on the teaching of other great nations; if now we are wise, we will ourselves take the lead, or at least an independent and intelligent attitude. We must not be deluded by a fatal optimism.

If now our country would escape the reproach and disgrace of being the only civilized nation in the world to

fail to provide instant and automatic relief for the sick and injured workman, the whole nation must stop and think; no one section, no one group, no combination of interests can remove the reproach; the awakening must be national. The selfishness of private greed, and the personal interests of the politician are ever present in systematic insistence and will become overwhelming unless the attention of the whole people is directed to our needless sacrifice of human life and efficiency.

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CHAPTER XLII

INDUSTRIAL SAFETY

By WILLIAM H. TOLMAN

IN the present discussion of industrial safety, it is possible only to touch upon some of the salient points by showing safeguards of a general type, adaptable to the usual condition of factories, mills and workshops, ever bearing in mind the need for getting down to the level of the "chump" workman, the careless and indifferent workman, and the foreigner who not only does not speak in English but does not think in English. Thus, to hammer the safety idea into the head of the man looking for a job, one large corporation displays a prominent sign, in six different languages, on the door of the employment office:

"Notice to men seeking employment: Unless you are willing to be careful to avoid injury to yourself and fellow workmen, do not ask for employment. We do not want careless men in our employ."

Another sign, printed in four languages, framed under glass in a weather-proof box, posted just inside the gate at each of the entrances to the works, requests every employee to be on the lookout for defects in the grounds or machinery, for carelessness of other employees, for dangerous or damaging conditions anywhere in the works; and, in case anything of the kind comes to his notice, to report it to the superintendent or take such other action as may be necessary. It plainly states that any report of the above nature is to be a personal matter between the man himself and the superintendent.

Once within sight of the works, at each gate house signs, plain by day and illuminated at night, silently preach the duty and obligation of safety:

“ The prevention of accidents and injuries by all possible means is a personal duty, which everyone owes, not to himself alone, but also to his fellow workmen.”

Every four days these signs are changed from English to Hungarian or Slavish.

In addition to these signs, there are danger signs placed on doorways, columns and other places too close to the railway tracks to allow a man riding on the side of a car to pass. Such signs are also used over doorways where clearance is not sufficient for a man on a box car. These, as must be the case with all effective danger signs, are brief and to the point; a lengthy wording defeats its own object.

At a recent regular safety meeting in a large plant, it was concluded that most of the signs used were worthless, since the large amount of material printed on each was confusing, and the effort necessary to read it more than the average employee will make. It was also decided that a strong, forceful sign printed in plain English will be read by all who can read and will be far better than a sign printed in many languages which will be read by few, if read at all.

To supplement the sign in English, it was recommended that a device or symbol of safety be printed on each sign, this symbol clearly indicating the necessity for caution, without regard to the ability of the individual to read English or to read at all. This symbol should be simple in design and characteristic, with the idea that, eventually, it will automatically convey the idea of caution and carry its meaning just as clearly as do the Red Cross and other well-established symbols.

In general yard practice, far-seeing employers are providing viaducts for crossing tracks, thus eliminating the peril of men being run over by shifting cars and passing trains. Formerly escaping steam frequently obscured the engineer's view of such tracks; today vent

pipes are carried so high that the vision of the engineer is never obstructed. To give the engineer, when approaching crossings, a clear view, wire mesh fences are replacing the usual boards which obscure the vision. So that all yard men may hear the clang of the warning bell of the locomotives, it is placed low down in front, instead of on top, for the sake of greater safety in its warning notes. In shunting trains in the yards, the engineer may not be aware that a car is loading or unloading. To advise him, a track signal is clamped to the rail. At night, a red light illuminates the target.

Often a workman, carelessly stepping in front of an approaching train, is killed or maimed for life. Cheap hand-rails of wood or iron pipe will effectually prevent such occurrences. Safety gates, locked, and in control of an operator, are provided at the general exits from shops which open on to tracks. To guard against the peril of trucks coming out from the shops, a caution sign reads as follows:

“ All vehicles keep to the right. Speed limit, 8 miles an hour. Electric trucks must be kept under full control, and sound a warning when coming out of the shops.”

The perils incident to the industry within a plant are enormous. There is one concern known to the writer, whose trackage of sidings without and tracks within the buildings, is nearly 1,000 miles. One fruitful source of accident has been the unguarded frog; now guards made of skelp steel, cut, bent and securely fastened, replace the wooden blocks formerly used as a guard to prevent men from having their feet caught in the frog of the switch. The General Electric Company of Berlin fastens a toe guard on all the flat cars in their yards and shops.

For the car shifter, handles with sharpened prongs are provided for forcing the car along. These bite into the rail when the handle is raised and as the handle must be

lifted, the danger of its falling violently and thereby breaking legs and feet, is eliminated.

A large plant has many valve pits; when these are open, side rails will prevent the careless and heedless from stumbling down. One of the best safety devices in a yard is a good roadway. When roadways are provided the men use them, instead of cutting across lots to the peril of broken arms and legs.

Closely connected with yard practice and transportation is the problem of the crane.

A fender should be added to the foot of the gantry crane, to push off anyone who has no business on the track. To enable the craneman to climb into the cab without danger, a platform for all outside work should be provided.

In the iron and steel industry, the danger is by no means over for the craneman once he is within the cab. For him an iron cage or closet is provided in which he may take refuge when there is danger of a spill or splash of metal. Were it not for this he would frequently be severely burned. These refuges are built of steel, with perfectly tight joints, sides lined with asbestos, and concrete floor. The door swings easily and closes automatically, and the windows are mica-covered. The craneman in this iron refuge can operate the bridge travel controller of the crane, and at the same time escape any injury from heat or flame.

The safety factor in a hook is most serious. To prevent the worker from getting his hands or fingers caught between the chain and the hook, a safety handle is attached.

To keep men in the bay from getting their hands on the crane rail, a wire mesh shuts out the entire length of the bay. Should a man carelessly lean his arm or put his hand on the crane rail, a wire brush gently but firmly pushes it away. And to make precautions doubly sure,

a red flag target is attached to the crane rail, to prevent the craneman from running beyond a point which might endanger the lives of men working on or near the runway. For the same purpose a red lantern is hung on the flagstaff at night.

Cranes have been known to run away and carry with them a part of the shop. To guard against this form of kleptomania, a spring buffer on the runway will cushion the shock and stop the crane. In one instance, an operator, not realizing that he was near the end of the runway, ran his crane against the buffer at nearly full speed, and rebounded about 100 feet, but without injury to either the crane or himself.

It is a standing rule at the U. S. Steel Corporation works that all embankments five feet high, or more, must have a pipe railing, and wherever necessary, get-away stairs. In former times, the men were obliged to jump over the great grinding rolls; today stairs with side rails afford safety. When it is impossible to build a passageway over the rolls, tunnels are dug. In the same corporation's plants, toe guards must be used on all platforms, to prevent tools or materials from falling on the men below. For the use of the lamp trimmers in cleaning and trimming arc lights, walks with pipe iron railings in the roof trusses are provided. Ladders with side rails run to the top of the blast furnaces, to prevent the men from falling.

It goes without saying that gears and belts should be protected, but this rule is not nearly so common as it should be in American practice.

Hollow set screws are now used in the best machine shops. For the lathe, one shop has designed a dog with no projecting screw; or where the set screw is in use, it is covered by a loop of metal.

In one of our large machine shops a man's leg was caught and crushed by the planer. Now safety plates

are put in the bed on the open side, so that any obstruction, whether of men or things, is pushed out of the way without injury. For eye protection from chips, a simple device consisting of a light portable frame is arranged to swivel, raise and lower to any position. This frame is covered with burlap so that the chips will stick to it and not glance off, injuring the face of another workman or the passerby. In German practice, a portable wire screen is often used for purpose of eye protection.

To prevent the pieces of the grinding or polishing wheels from scattering, in case they burst, safety hoods and collars are the best safety device. To protect the eyes, a piece of plate glass permits constant sight of the work, but keeps sparks or chips away from the face. For the universal milling machine, a safe and convenient handle for sliding the shifter back and forth is employed.

Cases are not uncommon in which workmen cleaning boilers or acid tanks have been killed by the accidental turning on of steam or acids by some outside workman. To protect a man entering a boiler, the two steam feed and blow-off valves between the boiler and main headers should be closed and securely locked by means of a hinged metal case, slipped over valve handle and padlocked. In addition, metal tags reading " Danger, man in boiler," are attached in each case. A small danger flag is a further precaution. One shop practice has all boilers distinctly numbered both front and rear. The crown valve on top of each boiler is also numbered correspondingly with a metal plate so that the number cannot be effaced, thus avoiding possible confusion in operating or locking a wrong valve.

A stethoscope or sound detector for determining the condition of fly-wheels and generator-wheel spokes is making its appearance; it is also used for determining the condition of those parts of a machine which are in motion and cannot be seen. For example, loose bolts on

a steam piston can be detected by this apparatus and the possible breaking of a cylinder head or some other part of the engine be thereby avoided.

The peril of the unprotected saw needs no comment. One type of a protecting device is an adjustable guard for the circular saw, and a fence and casing around the belting; a penalty of dismissal attaches to the removal of guards.

The electric switch is a danger center. At each of these, blue and white enameled warning signs are posted. A danger tag is carried by every man having occasion to work upon electrically driven machinery and is attached to the switch by him, when he is about to work on any machinery operated by such switch. As this tag has printed on it the name of the man attaching it, responsibility is absolutely fixed.

It is often stated that even if safety devices are provided, the workmen will not make use of them. While this may be true of the man who is not thoughtful for his employer, his fellow workman, and his family, it is more generally a characteristic of ignorance and bravado. It is therefore necessary to fix the responsibility in the use of safety devices through compulsion. The foreman is the responsible head for the workers immediately under him; he sees that the new workman is instructed in the use of the machine at which he is placed; he assigns workmen to their various duties and tasks, and it is his duty to see that the safety devices are used.

"Discharge the foreman," is the compulsion in vogue in some large shops to ensure the use of safety devices. Here the management recognize that it is up to the foreman to prevent accidents, by compelling the workmen to use the safeguards which are provided. When this pressure is brought to bear upon the foreman, he is going to see to it that he does not lose his job.

The whole matter of industrial safety is one of educa-

tion. As in the case of any other innovation, it meets more or less opposition from both master and men. When, however, the initial stage has once been passed, it will be looked upon as a matter of course that safety devices must be provided and used. Until that time—until the consideration of safety becomes of as great importance as questions of producing, selling and advertising—until it becomes a part of the plant's industrial policy—the American industrialist will not have done all in his power to protect the lives of the industrial army whose lives and limbs are entrusted to his keeping, at least during the working day.

Among the men the Committee of Safety is a potent factor in the promotion of industrial safety. In the stormy days of the French Revolution, the Committee of Safety was the engine of destruction and death, cutting off the heads of thousands of the noblest, not only of the aristocracy but the brawn and sinew of the nation, spreading desolation and bereavements throughout the length and breadth of the land. The Committee of Safety of today keeps heads where nature intended them to be; stands for the integrity of the family, and defends the sacredness of life.

The organization and development of Committees of Safety among workmen and operatives in factories, mills and shops, is a most important factor of modern industrialism. No one is so well informed of the dangers of any particular trade or process as the foremen and superintendents under whose care are the men and women who will be injured if accidents occur. No one is, therefore, more capable than they of suggesting the methods and devices to be employed in safeguarding their employees from casualties. Furthermore, the safety appliances of any plant will be most effectively used and maintained when they have been approved or originated, and are to

be administered, in the very group which is to be benefited by them.

As an illustration of the effectiveness of a Committee of Safety, I have selected one recently organized in a large plant. This committee has for its chairman a man thoroughly familiar with the technical and mechanical side of the industry; its other members are such employees as he and the heads of the several departments may select.

The duty of the committee is to take note of any defects in machinery, buildings, method of working or of handling material, or of any condition throughout the works which may be a cause of accidents to employees, or which may be detrimental to their health.

Each week the chairman makes requisition on the head of some department for two assistants. The committee devotes one-half a day to inspection; for the time so occupied, men are paid at their usual hour rate, if hour men, or if tonnage men, for the average one-half turn for the week in which their inspection service takes place. After each inspection, the committee furnishes the manager a report covering such matters as, in their opinion, call for attention, with recommendations regarding the same. These reports are read and considered at the following daily meeting of the superintendents. All employees are urged to co-operate with the committee and it is expected that they will be interested in carrying out the recommendations which are approved and put into effect by the management.

A very subtle test of the efficiency of a plant is the condition of the lavatories. The sanitary equipment which I have selected as a good type is for the exclusive use of foundry employees. The walls and floors are tiled; automatic flushing latrines, porcelain individual wash bowls and a shower bath are provided, and all fixtures are thoroughly modern and sanitary in every respect.

The matter of drinking water directly concerns good health and efficiency. After the purity of the water supply is established, the best system of distribution is the "bubble" type of drinking fountain, eliminating the cup, with its ever-present peril of communicable diseases. If the flow of water cannot be continuous from the fountain, a check valve may be used. If other systems are used, drinking water barrels are good, provided they can be put in charge of one man, whose duty it shall be to keep them clean, iced and ready for use. These barrels should be kept locked to prevent contamination.

One of the best general precautionary measures for safety is the establishment of an emergency station in the works, where all minor injuries can be treated at once. Nowhere else does the proverbial "stitch in time" find more practical application than at the factory emergency station. How serious it is considered in one plant is indicated by the following notice:

"Every employee injured in his work, no matter how slight the injury, must go immediately to the Mill Emergency Hospital for the necessary attention. Neglect of slight injuries often results in blood poisoning and serious trouble. Do not dress your cuts and injuries yourself, but go to the Mill Hospital. No accident relief will be paid, unless you report promptly to the Mill Hospital, and follow the instructions given you there."

All stretchers are made of light pipe, compact when folded and easily and quickly set up. At the General Electric Company in Berlin, I found a very complete installation, consisting of a folding stretcher, so compact that it can be stowed away in the cupboard on the wall. The same company has installed a double bicycle ambulance service, for the rapid conveyance of an injured man to their emergency hospital.

There are four groups of interests involved in accidents arising in industrial pursuits: the workman, the

employer, the community, and the people at large. The latter are involved as sufferers almost exclusively in accidents occurring in different means of transportation, but may be ignored in dealing with accidents in manufacturing operations.

The community is involved, because it is very often called upon to care for those whose means of livelihood have been impaired or entirely cut off, directly or indirectly. There are those who claim that this is imposing upon the community a burden which it is the duty of the industry to bear, and here we are upon fairly debatable ground.

The workman is probably the greatest sufferer, considering his means, and this has led public opinion and, in more concrete form, legislative bodies, to seek relief along the line of least resistance—that of making the employer, usually possessing financial responsibility, carry the whole load.

The recent decision of the Supreme Court of the State of New York has done much to clarify the situation, so far as employers' liability is concerned. Its temper has been admirable, in that a good deal of sympathy has been shown towards well-meant efforts at reform, but it has been clearly pointed out that fundamental rights must be respected. There has been altogether too much disposition to be generous with other people's money, and the money has been that belonging to those who have embarked their capital in industrial enterprises.

To reach a thorough understanding, and to get at a fair and honest distribution of responsibility and of contributions for relief, an analysis of industrial accidents will be helpful.

There is, first, under present circumstances in this country, the large group of accidents due to the inherent risks of the industry—the accidents which no foresight or care on the part of either the employer or the work-

men could prevent. This is a fair, and should be a direct, charge upon the industry, which the consumer ought to be made to share in, if it were possible to add part or the whole of it to the price of the product.

Secondly, there are the accidents due to carelessness or recklessness of workmen and their fellows, many of which are brought about by that resistance to reasonable discipline which is a characteristic of the American workman, and many of which are caused by ignorance, for which the management can fairly be held responsible.

For accidents brought about by carelessness or recklessness, the guilty should suffer, and if there be an appeal to anyone, it should be to the fellow workmen. That the latter do often nobly respond as individuals, we all know from our own experience; but I do not know of any systematic effort in that direction, and certainly the labor unions have never clearly recognized a duty in this respect.

The last group of accidents is that for which the employer is squarely responsible because he does not provide the necessary safeguards, or because he neglects opportunities fairly within his reach to educate the ignorant, to restrain the reckless, or to secure the active co-operation of the intelligent and well-disposed. It is not enough to spend money and to exercise ingenuity in equipping a plant with safety devices, and in seeing that they are kept in efficient condition. It is not enough to draw up rules and to see that they are obeyed. There must be developed, systematically, throughout the entire organization, a spirit of co-operation from top to bottom, and that spirit of co-operation must permeate the entire industry.

In the iron and steel industry, a splendid spirit of co-operation exists and is a powerful aid in attaining the ends sought, but this is the one branch of manufacturing in which this spirit does prevail in the industry gener-

ally. Such co-operation should be universal. The companies and their managers and associates must have the active help of every one down to the water-boy. There must be a frank and free interchange of experience and attainment by all.

There is danger to the manufacturer in neglect of industrial safety. The country has been aroused on the subject. This has been done in part by men and women whose enthusiasm is honest but is unhampered by facts, or unchecked by the rights of others. It has been done in part by self-seeking demagogues. But whether it has been done by honest lovers of humanity or by wicked scoundrels, the fact remains that known and serious abuses in the industrial world, regarded with long continued and callous indifference by those who might have corrected them, have created in the public mind that feeling of exasperation and antagonism, which, in a country like ours, spells hasty and unfair legislation. The most effective means for meeting such a movement is to remove what just complaints and criticisms there are.

To avoid oppression or unjust legislation it behooves our manufacturers to do all in their power to reduce to a minimum the suffering due to accidents to life and limb. They must put their house in order; they must cut the ground from under a movement which is dangerous, because there is some justification for it; they must come into the forum of public opinion with clean hands. After all, it is a business proposition, however much the sentimental and humanitarian side may at first appeal for attention and sympathy.

PART V
LIABILITY INSURANCE

CHAPTER XLIII
HISTORICAL SKETCH

BY EDWIN W. DELEON

FROM the time whereof the memory of man runs not to the contrary, the responsibility of employers for injuries or death suffered by their employees, or by other persons, has been a part of the law of all nations. Under the feudal system, the master was virtually the owner of the person of his servant and was, therefore, not liable to such servant for negligence, but was answerable in arms to persons injured through the negligence of his retainers. Under the Jewish law, as early as 1500 B. C., "if an employer allowed his ox to gore either his servant or a stranger he was required to pay various compensations to the injured, if he survived, or to his relatives in the event of the injury being followed by death." Under the Roman law, the master's liability was expressed in the maxim, "*Sic utere tuo ut alienum non laedas*," which doctrine has been the basis upon which all employers' liability and workmen's compensation legislation has been enacted.

The earliest recorded English decision on the question of negligence was rendered by Lord Holt in 1704 in the case of *Coggs v. Bernard*, (2 Lord Raymond 909) wherein the learned justice defined negligence as consisting of three degrees; namely, gross, ordinary and slight. Under the common law in Great Britain, an employer was liable for the acts of his employees, except that if one workman was injured through the negligence of another workman, the employer was not liable. This was known as the doctrine of fellow servants or common employment, and was first established in 1837 by Lord Abinger in the famous

case of *Priestly v. Fowler* (3 Mees and W. 1). This case also laid down the principle that a servant, "assumes all the ordinary risks which are incidental to his employment," known as the doctrine of "*volenti non fit injuria*," which, broadly interpreted, means that one who voluntarily incurs a risk cannot recover damages for an injury sustained thereby.

It was not, however, until the passage of a statute in 1846, known as Lord Campbell's Act, that the representatives of a deceased workman killed by accident had any redress against his employer, for under the common law a personal action died with the person entitled to bring it, or upon the death of the person against whom it could have been brought (*actio personalis moritur cum persona*). By the terms of the act, the representative of the deceased had the right to sue for damages within twelve months after the death of the injured.

In 1875 and 1876, bills were introduced in Parliament attempting to abolish entirely the doctrine of common employment and the defense of assumption of risk, but these bills were withdrawn on the understanding that Lord Beaconsfield, then prime minister, would have the whole subject investigated by a select committee of Parliament. This committee was appointed and in 1877 submitted a report, recommending that where a master delegates his duty of selecting proper servants, material and plant wholly to agents, such persons should be held to be the "alter ego" of the master and not fellow servants of the injured employee.

In 1878 and 1879, various laws were proposed, none of which passed, but in 1880 a bill was introduced by Mr. Gladstone's government, which finally became a law and was known as the Employers' Liability Act of 1880. This law was originally limited in its operation to seven years, but the time was periodically extended until the passage of the Workmen's Compensation Act of 1897. The

intention of the government was to abolish by the act the doctrine of common employment, but this was not accomplished, except as to five causes of accidents named in the first section of the law, as follows:

(1) Defective ways, works, machinery and plant (if due to the negligence of the employer or of the person to whom has been delegated his duty thereabout).

(2) Negligence of a superintendent (if superintendence was his principal duty, and he was not ordinarily engaged in manual labor).

(3) Negligence of persons to whom the employer had delegated his powers of giving orders.

(4) Acts or omissions in obedience to rules or by-laws, or in obedience to instructions of persons authorized by employers to give them.

(5) In the case of railway companies, the negligent management of trains, points and signals.

The Employers' Liability Act failed to accomplish the desired results, and various unsuccessful attempts were made between 1882 and 1896 to amend the law. In 1897, the government made another attempt to deal with the question and described the situation thus: "The present law is notoriously inadequate; it fails to compensate for accidents if caused by fellow servants, if contributed to by the injured, and if resulting from the risks of occupation; it causes costly litigation, 35 per cent. of the amount recovered being legal expenses; it leaves the employer ignorant of what his liability is."

On May 3, 1897, the Secretary of State for the Home Department, introduced a bill to amend the Employers' Liability Act of 1880, by adopting the principle that when a person on his own responsibility and for his own profit, sets in motion agencies which create risks for others, he ought to be civilly responsible for the consequences of what he does. Accordingly, the first clause of the bill that is known as the Workmen's Compensation Act of

1897, provides: "If in any employment to which this act applies, personal injury by accident, arising out of and in the course of employment is caused to a workman, his employer shall be liable to pay compensation in accordance with the first schedule of this act."

The scope of the Act of 1897, is limited to employment in or about a railway, factory, mine, quarry or engineering work; or a building that exceeds thirty feet in height, constructed or repaired by means of scaffolding, or being demolished, or on which machinery, driven by power is being used for such purposes. An act passed in 1900, added workmen in agriculture, which was defined as "including horticulture, forestry, and the use of land for any purpose of husbandry, inclusive of the keeping or breeding of livestock, poultry, or bees, and the growth of fruit and vegetables."

In November, 1903, the home secretary appointed a committee to investigate and report what amendments in the Workmen's Compensation law were necessary or desirable, also to what classes of employment not already included in these acts could the acts be properly extended. The report of the committee resulted in the passage of the Workmen's Compensation Act of 1906, enacted December 21, 1906, to take effect July 1, 1907, replacing acts of 1897 and 1900.

A brief summary of the Act of 1906 shows the following essential features:

INJURIES COMPENSATED. Injuries by accident arising out of and in the course of the employment which cause death or disable a workman for at least one week from earning full wages at the work at which he was employed. Compensation is not paid when injury is due to serious and wilful misconduct, unless it results in death or serious and permanent disablement.

INDUSTRIES COVERED. "Any employment."

PERSONS COMPENSATED. Any person regularly em-

ployed for the purposes of the employer's trade or business, whose compensation is less than £250 (\$1,216.63) per annum; but persons engaged in manual labor only are not subject to this limitation.

GOVERNMENT EMPLOYEES. Act applies to civilian persons employed under the Crown to whom it would apply if the employer were a private person.

BURDEN OF PAYMENT. Entire cost of compensation rests upon employer.

COMPENSATION FOR DEATH. (a) A sum equal to three years' earnings, but not less than £150 (\$729.98) nor more than £300 (\$1,459.95), to those entirely dependent on earnings of deceased.

(b) A sum less than above amount if deceased leaves persons partially dependent on his earnings, amount to be agreed upon by the parties or fixed by arbitration.

(c) Reasonable expenses of medical attendance and burial, but not to exceed £10 (\$48.67) if deceased leaves no dependents.

COMPENSATION FOR DISABILITY. (a) A weekly payment during incapacity of not more than 50 per cent. of employee's average weekly earnings during previous twelve months, but not exceeding £1 (\$4.87) per week; if incapacity lasts less than two weeks no payment is required for the first week.

(b) A weekly payment during partial disability, not exceeding the difference between employee's average weekly earnings before injury and average amount which he is earning or is able to earn after injury.

(c) Minor persons may be allowed full earnings during incapacity, but weekly payments may not exceed 10 shillings (\$2.43).

(d) A sum sufficient to purchase a life annuity through the Post Office Savings Bank of 75 per cent. of annual value of weekly payments may be substituted, on application of the employer, for weekly payments after six months; but other arrangements for redemption of

weekly payments may be made by agreement between employer and employee.

REVISION OF BENEFITS. Weekly payments may be revised at request of either party, under regulations issued by the secretary of state.

INSURANCE. Employers may make contracts with employees for substitution of a scheme of compensation, benefit, or insurance in place of the provisions of the act, if the registrar of friendly societies certifies that the scheme is not less favorable to the workmen and their dependents than the provisions of the act, and that a majority of the workmen are favorable to the substitute. The employer is then liable only in accordance with the provisions of the scheme.

SECURITY OF PAYMENTS. In case of employer's bankruptcy, the amount of compensation due under the act, up to £100 (\$486.65) in any individual case, is classed as a preferred claim; or where an employer has entered into a contract with insurers in respect of any liability under the act to any workman, such rights of the employer, in case he becomes bankrupt, are transferred to and vested in the workman.

SETTLEMENT OF DISPUTES. Questions arising under the law are settled either by a committee representative of the employer and his workmen, by an arbitrator selected by the two parties, or, if the parties cannot agree, by the judge of the county court, who may appoint an arbitrator to act in his place.

The development of employers' liability insurance in Great Britain has been remarkable since the enactment of the Liability Act of 1880, and particularly since the passage of the Compensation Acts of 1897 and 1906. The business, as a whole, has not been profitable, but it has not proven as disastrous as might have been expected.

Immediately after the Act of 1897 became effective, the leading companies formed an association and maintained tariff rates for a time, but many new companies

were organized that did not join the association, and on the contrary cut the tariff rates, which resulted in the disruption of the association and the general demoralization of rates for several years.

Shortly after the passage of the Workmen's Compensation Act of 1906, many of the leading companies, impelled by their unprofitable experience, organized a new tariff association, and adopted rates designed to more adequately meet the increased liability created by the new law. New companies continued to spring up, however, and as a rule, did not join the tariff association at first, with the result that at the end of 1909 thirty-four tariff companies and twenty non-tariff companies were actively competing for business in Great Britain.

Liability Insurance in United States

The first policy of liability insurance in America was issued in the year 1886 by an English company that had shortly before the date of that policy established an American branch at Boston. Liability insurance in this country was limited at first to indemnity against loss on account of bodily injuries accidentally sustained by employees of the assured including such injuries as result in death, known under the broad term of employers' liability. It soon became apparent, however, that protection was needed against liability for accidents to the public in general and to workmen not employed by the assured but engaged in work upon the premises of the assured or in doing part of the work originally undertaken by the assured. By rapid development, the scope of liability policies was enlarged to cover these risks under various forms of policies known as Public Liability, General or Landlords' Liability, Vehicle Liability, Elevator Liability, and other forms of indemnity, all of which will be more specifically described hereafter.

Massachusetts Employers' Liability Act

In 1887, the State of Massachusetts passed the first employers' liability law enacted by any state of the United States. This act was fashioned to a great extent after the English Employers' Liability Act of 1880, that was afterwards modified by the Acts of 1897 and 1900, and amended by the Act of 1906.

The Massachusetts act provides as follows:

SECTION 1. Where, after the passage of this act, personal injury is caused to an employee, who is himself in the exercise of due care and diligence at the time.

(1) By reason of any defect in the condition of the ways, works or machinery connected with or used in the business of the employer, which arose or had not been discovered or remedied, owing to the negligence of the employer or of any person in the service of the employer and intrusted by him with the duty of seeing that the ways, works or machinery were in proper condition; or

(2) By reason of the negligence of any person in the service of the employer, intrusted with and exercising superintendence, whose sole and principal duty is that of superintendence;

(3) By reason of the negligence of any person in the service of the employer who has the charge or control of any signal, switch, locomotive engine, or train upon a railroad, the employee, or, in case the injury results in death, the legal representative of such employee shall have the same right of compensation and remedies against the employer as if the employee had not been an employee of nor in the service of the employer, nor engaged in its work.

SEC. 2. Where an employee is instantly killed or dies without consciously suffering, as the result of the negligence of an employer, or of the negligence of any person for whose negligence the employer is liable under the provisions of this act, the widow of the deceased, or, in case there is no widow, the next of kin, provided that

such next of kin were at the time of the death of such employee dependent upon the wages of such employee for support, may maintain an action for damages therefor and may recover in the same manner, to the same extent, as if the death of the deceased had not been instantaneous, or as if the deceased had consciously suffered.

SEC. 3. The amount of compensation receivable under this act in cases of personal injury shall not exceed the sum of \$4000. In case of death, compensation in lieu thereof may be recovered in not less than \$500 nor more than \$5000, to be assessed with reference to the degree of culpability of the employer herein, or the person for whose negligence he is made liable; and no action for the recovery of compensation for injury or death under this act shall be maintained unless notice of the time, place and cause of the injury is given to the employer within thirty days, and the action is commenced within one year from the occurrence of the accident causing the injury or death. But no notice given under the provisions of this section shall be deemed to be invalid or insufficient solely by reason of any inaccuracy in stating the time, place or cause of the injury, provided it is shown that there was no intention to mislead and that the party entitled to notice was not in fact misled thereby.

SEC. 4. Whenever an employer enters into a contract, either written or verbal, with an independent contractor to do part of such employer's work, or whenever such contractor enters into a contract with a sub-contractor to do all or any part of the work comprised in such contractor's contract with the employer, such contract or sub-contract shall not bar the liability of the employer for injuries to the employees of such contractor or sub-contractor, by reason of any defect in the condition of the ways, works, machinery or plant, if they are the property of the employer, or furnished by him, and if such defect arose and had not been discovered or remedied, through the negligence of the employer or of some person intrusted by him with the duty of seeing that they were in proper condition.

SEC. 5. An employee or his legal representative shall not be entitled under this act to any right or compensation or remedy against his employer in any case where such employee knew of the defect or negligence which caused the injury, and failed within a reasonable time to give, or cause to be given, information thereof to the employer or to some person superior to himself in the services of the employer, who had intrusted to him some general superintendence.

SEC. 6. An employer who shall have contributed to an insurance fund created and maintained for the mutual purpose of indemnifying an employee for personal injuries for which compensation may be recovered under this act, or to any relief society formed under chapter 244 of the acts of the year 1882, as authorized by chapter 125 of the acts of the year 1886, may prove, in mitigation of the damages recoverable by an employee under this act, such proportion of the pecuniary benefit which has been received by such employee from any such fund or society on account of such contribution of said employer, as the contribution of such employer to such fund or society bears to the whole contribution thereto.

SEC. 7. This act shall not apply to injuries caused to domestic servants, or farm laborers, by other fellow employees, and shall take effect on the first day of September, 1887.

The following amendment was subsequently adopted:

SECTION 1. Section 3 of chapter 270 of the acts of the year 1887 is hereby amended by inserting after the word "death" in the thirteenth line thereof the following words: "The notice required by this section shall be in writing, signed by the person injured or by some one in his behalf; but if from physical or mental incapacity it is impossible for the person injured to give the notice within the time provided in said section, he may give the same within ten days after such incapacity is removed, and in case of his death without having given the notice and without having been for ten days at any time after

his injury of sufficient capacity to give the notice, his executor or administrator may give such notice within thirty days after his appointment."

SEC. 2. This act shall take effect upon its passage.

New York Employers' Liability Law

Other states were not slow to follow the lead of Massachusetts and in 1902, the State of New York enacted the first Employers' Liability Law in that state, known as chapter 600 of the Laws of 1902, effective July 1, 1902, which provides as follows:

SECTION 1. Where, after this act takes effect, personal injury is caused to an employee who is himself in the exercise of due care and diligence at the time:

(1) By reason of any defect in the condition of the ways, works or machinery connected with or used in the business of the employer which arose from or had not been discovered or remedied owing to the negligence of the employer, or of any person in the service of the employer and intrusted by him with the duty of seeing that the ways, works or machinery were in proper condition;

(2) By reason of the negligence of any person in the service of the employer intrusted with and exercising superintendence whose sole or principal duty is that of superintendence, or in the absence of such superintendent, of any person acting as superintendent with the authority or consent of such employer;

(3) The employee, or in case the injury results in death the executor or administrator of a deceased employee who has left him surviving a husband, wife, or next of kin, shall have the same right of compensation and remedies against the employer as if the employee had not been an employee of nor in the service of the employer nor engaged in his work. The provisions of law relating to actions for causing death by negligence, so far as the same are consistent with this act, shall apply to an action brought by an executor or administrator

of deceased employee suing under the provisions of this act.

SEC. 2. No action for recovery of compensation for injury or death under this act shall be maintained unless notice of the time, place and cause of the injury is given to the employer within one hundred and twenty days, and the action is commenced within one year after the occurrence of the accident causing the injury or death. The notice required by this section shall be in writing and signed by the person injured or by some one in his behalf, but if from physical or mental incapacity it is impossible for the person injured to give notice within the time provided in said section, he may give the same within ten days after such incapacity is removed. In case of his death without having given such notice, his executor or administrator may give such notice within sixty days after his appointment, but no notice under this section shall be deemed to be invalid or insufficient solely by reason of any inaccuracy in stating the time, place or cause of the injury if it be shown that there was no intention to mislead, and that the party entitled to notice was not in fact misled thereby. The notice required by this section shall be served on the employer, or if there is more than one employer, upon one of such employers, and may be served by delivering the same to or at the residence or place of business of the person on whom it is to be served. The notice may be served by post, by letter addressed to the person on whom it is to be served, at his last known place of residence or place of business, and if served by post shall be deemed to have been served at the time when the letter containing the same would be delivered in the ordinary course of the post. When the employer is a corporation, notice shall be served by delivering the same or by sending it by post addressed to the office or principal place of business of such corporation.

SEC. 3. An employee, by entering upon or continuing in the service of the employer shall be presumed to have assented to the necessary risks of the occupation or em-

ployment and no others. The necessary risks of the occupation or employment shall, in all cases arising after this act takes effect, be considered as including those risks, and those only, inherent in the nature of the business which remain after the employer has exercised due care in providing for the safety of his employees, and has complied with the laws affecting or regulating such business or occupation for the greater safety of such employees. In an action maintained for the recovery of damages for personal injuries to an employee received after this act takes effect, owing to any cause for which the employer would otherwise be liable, the fact that the employee continued in the service of the employer in the same place and course of employment after the discovery by such employee, or after he had been informed of the danger of personal injury therefrom, shall not, as a matter of law, be considered as an assent by such employee to the existence or continuance of such risks or personal injury therefrom, or as negligence contributing to such injury. The question whether the employee understood and assumed the risk of such injury, or was guilty of contributory negligence, by his continuance in the same place and course of employment with knowledge of the risk of injury, shall be one of fact, subject to the usual powers of the court in a proper case to set aside a verdict rendered contrary to the evidence. An employee, or his legal representative, shall not be entitled under this act to any right of compensation or remedy against the employer in any case where such employee knew of the defect or negligence which caused the injury and failed, within a reasonable time, to give, or cause to be given, information thereof to the employer, or to some person superior to himself in the service of the employer who had intrusted to him some general superintendence, unless it shall appear on the trial that such defect or negligence was known to such employer, or superior person, prior to such injuries to the employee.

SEC. 4. An employer who shall have contributed to

an insurance fund created and maintained for the mutual purpose of indemnifying an employee for personal injuries, for which compensation may be recovered under this act, or to any relief society or benefit fund created under the laws of this State, may prove in mitigation of damages recoverable by an employee under this act such proportion of the pecuniary benefit which has been received by such employee from such fund or society on account of such contribution of employer as the contribution of such employer to such fund or society bears to the whole contribution thereto.

SEC. 5. Every existing right of action for negligence or to recover damages for injuries resulting in death is continued, and nothing in this act contained shall be construed as limiting any such right of action, nor shall the failure to give the notice provided for in Section 2 of this act be a bar to the maintenance of a suit upon any such existing right of action.

SEC. 6. This act shall take effect July 1, 1902.

Many states have passed laws regulating the liability of employers for injuries to employees, including the liability of railroad companies for accidents to their employees. A list of such states arranged alphabetically follows:

Alabama	(Code 1897)	
Arizona	(Statutes 1901)	
Arkansas	(Statutes 1904)	(Acts 1907)
California	(Acts 1907)	
Colorado	(Statutes 1904)	
Connecticut	(Statutes 1902)	
Florida	(Statutes 1906)	
Georgia	(Code 1895)	
Illinois	(Statutes 1896)	(Acts 1899)
Indiana	(Statutes 1901)	
Iowa	(Acts 1907)	
Kansas	(Statutes 1901)	(Acts 1903)
Louisiana	(Code 1887)	
Maryland	(Code 1888)	

Massachusetts	(Laws 1902)	
Minnesota	(Laws 1905)	
Mississippi	(Code 1906)	(Acts 1910)
Missouri	(Statutes 1899)	(Acts 1907)
Montana	(Code 1895)	(Acts 1905)
Nebraska	(Acts 1907)	
New Jersey	(Acts 1911)	(Acts 1905)
	(Acts 1907)	
Nevada	(Laws 1897)	
New Mexico	(Acts 1910)	
New York	(Statutes 1905)	
North Carolina	(Code 1905)	(Acts 1907)
North Dakota	(Statutes, third edition)	
Ohio	(Acts 1902; 1904; 1910)	
Oklahoma	(Constitution 1907)	
Oregon	(Acts 1903)	(Acts 1910)
Pennsylvania	(Acts 1907)	
Porto Rico	(Statutes 1902)	
Rhode Island	(Laws 1896)	
South Carolina	(Constitution; Code 1902; Acts 1903)	
South Dakota	(Code 1903)	(Acts 1907)
Texas	(Acts 1897)	(Acts 1905)
Utah	(Statutes 1898)	
Virginia	(Constitution)	(Code 1904)
	(Acts 1910)	
Washington	(Acts 1905)	(Acts 1911)
Wisconsin	(Statutes 1898)	
Wyoming	(Constitution)	
United States.....	(Acts 1906)	(Acts 1908)

Massachusetts Liability Loss Reserve Law

The development of liability insurance in America has been remarkable, especially during the past fifteen years, from 1897 to 1911. For many years it was difficult to secure reliable statistics, showing the operations of the companies, but in 1905 the state of Massachusetts passed the first liability loss reserve law to be enacted by any state and it may properly be said that this act marked

the first step in the conservative and scientific conduct of liability insurance in the United States. Owing to the importance of this law, and its far-reaching influence upon liability business throughout the country, it is advisable to give the provisions of the act in full:

SECTION 1. Every insurance company which has for ten years or more undertaken to insure persons, firms or corporations against loss or damage on account of the bodily injury or death by accident of any person for which loss or damage said persons, firms or corporations are respectively responsible shall, on or before the first day of October in each year, render to the insurance commissioner a statement in writing of its business transacted in the United States, which shall show separately for each of the five calendar years constituting the first half of the period of ten years next preceding the thirty-first day of December of the year in which the statement is made:

(1) The number of persons reported injured under all its forms of liability policies, whether such injuries were reported to the home office of the company or to any of its representatives, and whether such injuries resulted in loss to the company or not;

(2) The amount that, on or before the thirty-first day of August of the year in which the statement is made, had been paid on account or in consequence of all injuries so reported, including therein all payments on suits arising from such injuries;

(3) The number of suits or actions under such policies on account of injuries reported which have been settled either by payment or compromise;

(4) The amount paid in settlement of such suits or actions on or before the thirty-first day of August of the year when the statement is made, including therein all payments made on account or in consequence of injuries from which the suits arose, whether prior to or later than the date when the suits were brought.

SEC. 2. Every such company shall in its financial

statements hereafter made in this commonwealth use the experience so ascertained for computing its outstanding losses under all its forms of liability policies, irrespective of the date when the policies are issued. The average cost per suit of settling such cases, as computed by the data required in the preceding section, shall be multiplied by the number of suits or actions pending on account of injuries reported prior to eighteen months previous to the date on which the condition of the company is to be ascertained and shown, which suits or actions are being defended for or on account of a holder of any such policy; also the average cost on account of each injured person, determined as aforesaid from the company's experience, shall be multiplied by the number of injuries reported within the eighteen months prior to making the statement of the company's condition, whether such injuries were reported to the home office of the company or to any of its representatives. From the sum of these two products so ascertained there shall be deducted the amount of all payments made on account or in consequence of said injuries reported within eighteen months, this amount so deducted to be taken as of the date at which the said statement is made. The sum remaining after making this deduction shall be charged as the liability of the company on account of outstanding losses.

SEC. 3. Any admitted company issuing liability contracts which by reason of its limited experience in liability underwriting cannot furnish the information required by section one shall, nevertheless, until it is able to comply with said requirements, be charged with a liability for outstanding losses upon all kinds of its liability policies of an amount not less than the amount resulting from the following process: The number of suits or actions pending on account of injuries reported prior to eighteen months previous to the date of making up the statement, whether such injuries were reported to the home office of the company or to any of its representatives, which are being defended on account of the holder of any policy, shall be multiplied by the average cost per

suit as shown by the average experience of all other admitted liability companies, ascertained from the data required by section one; also the number of injuries reported under said policies at any time within eighteen months of making up the statement, whether reported to the home office of the company or to any of its representatives and whether such injuries resulted in loss to the company or not, shall be multiplied by the average cost for each injured person as shown by the average of said experience of all other admitted liability companies, ascertained from the data required by section one. From the sum of these two products there shall be deducted the amount of all payments made on account or in consequence of said injuries reported within eighteen months, this amount to be taken as of the date at which the statement is made. A sum not less than the amount remaining after this deduction shall be charged as a liability for outstanding losses to liability companies covered by the provisions of this section. The average cost for suits and for injured persons required by this section shall, on or before the first day of December of each year, be furnished by the insurance commissioner to every such company which has not had an experience of ten years in liability underwriting.

SEC. 4. This act shall take effect upon its passage.

The first report under the new law was rendered by the companies on October 1, 1906, covering ten years from 1897 to 1906, divided into five-year periods, that is from 1897 to 1901, and from 1902 to 1906. The following tables give the figures in detail upon which the reserve for unsettled losses was computed on December 31, 1906, by each company reporting to the Massachusetts Insurance Department. It will be noted that the total premiums received for the period in question amounted to \$110,183,588; the number of persons reported injured was 1,380,447; the amount paid on account of injuries reported was \$30,589,899; the number of suits settled was 30,568; the amount paid on suits settled was \$14,-

889,181; the number of outstanding suits was 11,866. The premiums received in the year 1906 amounted to \$18,781,693.25.

In 1887, total premiums secured by all companies transacting liability insurance in the United States were only \$203,132. At the expiration of five years, that is at the end of 1891, total premiums amounted to \$2,126,286; at the end of 1896, these premiums had increased to \$4,205,902. At the end of 1901, a further increase was made to \$8,328,834; at the end of 1906, these premiums had reached the great aggregate of \$18,781,693. In other words, the business of liability insurance in this country was ninety times greater at the end of 1906 than it was at the inception of the business twenty years before. For ten years, from 1887 to 1896, inclusive, total premiums equalled \$20,972,991, or at the rate of \$2,097,699 a year, while for the ten-year period, from 1897 to 1906, inclusive, these premiums had increased to the enormous sum of \$110,183,588, or at the rate of \$11,018,358 a year. It will be noted, therefore, that the average of business annually for the second period of ten years was over five times greater than for the first ten-year period. It will be further observed that total premiums for the first twenty years aggregated \$131,156,579, or an average of \$6,557,823 a year.

TABLE I—*Liability Experience*
(As reported to Massachusetts Insurance Department, October 1, 1908.)

Company.	Premium amount.	Number persons reported injured.	Amount paid on injuries reported in Column 2.	Average cost.	Number suits settled.	Amount paid on settled suits.	Average cost.
<i>Five Years, 1897-1901 Combined.</i>							
Employers' Liability.....	\$5,793,984	119,160	\$3,135,913	\$26.73	5,033	\$1,895,008	\$375.97
Travelers.....	5,200,895	94,766	2,845,532	29.41	4,045	1,960,965	484.79
Fidelity & Casualty.....	7,084,154	108,910	4,194,079	38.51	3,790	3,403,993	894.30
London Guarantee & Accident.....	3,543,716	80,533	1,804,693	22.53	2,066	1,154,866	561.97
Frankfort of Germany.....	2,772,866	51,940	1,771,798	34.11	1,767	901,113	509.97
Standard of Detroit.....	1,792,275	30,836	777,833	19.53	1,066	400,660	390.51
United States Casualty.....	1,658,379	29,781	842,940	28.30	1,094	480,408	439.13
American Mutual Liability.....	1,198,723	30,522	658,093	21.56	433	360,795	833.34
<i>Five Years, 1902-1906 Combined.</i>							
Employers' Liability.....	\$8,640,317	176,618	\$2,809,419	\$16.00	2,307	\$894,131	\$383.36
Travelers.....	13,293,790	240,116	3,783,547	15.76	4,555	1,637,415	357.38
Fidelity & Casualty.....	8,200,314	106,464	3,149,377	29.56	2,023	1,245,431	615.94
London Guarantee & Accident.....	4,807,386	101,516	1,447,474	14.26	1,066	437,108	403.49
Frankfort of Germany.....	3,577,105	59,472	1,370,970	21.37	1,331	573,100	374.33
Standard of Detroit.....	2,890,595	53,332	963,673	18.99	617	253,237	410.51
United States Casualty.....	1,733,713	30,788	517,379	16.80	737	221,986	293.34
American Mutual Liability.....	1,381,187	55,604	587,375	10.56	450	253,854	575.33

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(As reported to Massachusetts Insurance Department.)

COMPANY.	Number of suits pending account acc'ds reported 18 months prior to date of statement.	Average cost per suit.	Reserve.	Number of injuries reported during 18 months to date of statement.	Average cost per injury.	Reserve.	Deduct payments on account accidents reported within 18 months.	Net reserve Massachusetts Law.	Liability premiums 1906.	Premiums received to Dec. 31, 1906.
Employers' Liability.....	271	\$555.37	\$150,505.27	80,746	\$26.73	\$2,154,340.58	\$835,904.02	\$1,408,941.23	\$2,266,564.50	\$15,204,309
Travelers.....	1,712	484.79	829,960.48	138,648	29.41	4,077,037.08	1,282,792.31	3,694,805.85	4,422,776.09	20,559,802
Ætna.....	474	544.44	258,064.56	79,067	29.01	2,293,733.67	1,046,103.93	1,505,694.30	2,618,067.51	19,391,426
Fidelity & Casualty.....	692	634.29	438,928.68	41,109	38.51	1,583,107.59	848,964.96	1,173,071.31	1,898,035.87	16,037,605
London Guarantee & Accid't	436	581.97	253,738.92	36,781	23.52	865,089.12	380,906.90	737,921.14	1,257,327.12	8,975,844
Maryland Casualty.....	559	544.44	304,341.96	31,891	29.01	925,157.91	498,660.40	730,839.47	1,306,111.10	19,984,866
Ocean Accident & Guarantee	194	544.44	105,621.36	29,398	29.01	852,835.98	453,087.69	505,369.65	1,045,961.82	16,081,736
Casualty Co. of America....	89	544.44	48,455.16	14,915	29.01	432,684.15	235,123.31	246,016.00	822,431.02	12,392,596
Frankfort of Germany.....	375	506.97	191,238.75	21,935	34.11	748,202.85	301,484.40	637,957.20	858,200.10	6,815,339
Standard of Detroit.....	184	390.51	71,453.84	22,194	19.53	433,448.82	240,467.09	264,435.57	744,341.42	5,013,033
United States Casualty.....	94	439.13	41,278.22	11,352	28.30	321,261.60	142,432.52	220,106.30	413,196.50	3,691,404
General Accident.....	99	544.44	53,899.56	8,361	29.01	242,552.61	79,372.94	217,079.33	216,257.98	11,000,962
New Amsterdam.....	105	544.44	57,166.20	6,059	29.01	175,771.59	102,690.30	130,247.49	352,955.00	12,245,269
Philadelphia Casualty.....	35	544.44	19,055.40	3,074	29.01	89,176.75	58,222.73	50,009.41	161,486.58	1583,112
American Mutual Liability..	87	833.24	72,491.88	15,171	21.56	327,086.76	118,065.61	281,513.03	314,451.75	2,750,364
American Fidelity.....	5	544.44	2,720.00	52,046	29.01	59,354.46	31,367.77	30,706.69	143,525.89	1253,021

†Received since company began writing Liability Insurance. Less than ten years.

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| Name of Insurer | Years in which Insurer has been in business | | | | | | | | | | | | Total Assets | Total Liabilities | Total Capital | Total Surplus | Total Income | Total Expenses | Total Profit | Total Losses | Total Claims Paid | Total Dividends Paid | Total Reinsurance Paid | Total Reinsurance Received | Total Reinsurance Premiums | Total Reinsurance Commissions | Total Reinsurance Expenses | Total Reinsurance Profit | Total Reinsurance Losses | Total Reinsurance Claims Paid | Total Reinsurance Dividends Paid | Total Reinsurance Reinsurance Paid | Total Reinsurance Reinsurance Received | Total Reinsurance Reinsurance Premiums | Total Reinsurance Reinsurance Commissions | Total Reinsurance Reinsurance Expenses | Total Reinsurance Reinsurance Profit | Total Reinsurance Reinsurance Losses | Total Reinsurance Reinsurance Claims Paid | Total Reinsurance Reinsurance Dividends Paid | Total Reinsurance Reinsurance Reinsurance Paid | Total Reinsurance Reinsurance Reinsurance Received | 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In striking contrast to the figures shown by the preceding tables, the experience of practically the same companies for ten years ending December 31, 1910, is worthy of careful study. The total premiums reported to the Massachusetts department by fourteen companies amounted to \$181,276,782; the number of pending suits was 13,001; the total number of suits brought was 84,908, of which number 71,907 suits were settled. For the period from January 1, 1906, to August 31, 1910, that is to say, for the first four years and eight months after the effective date of the Massachusetts Loss Reserve Law, the showing as to the number of injuries reported and the number of suits settled leads to some interesting conclusions. The total number of injuries reported was 1,658,581; the total amount paid on account of such injuries was \$37,142,355; the average cost of each injury was \$22.39; the number of suits settled was 32,298; the total amount paid for suits settled was \$14,598,558; the average cost of each suit settled was \$451.99. It will be noted, however, that the number of injuries reported during eighteen months to date of statement, upon which a reserve must be maintained, was 770,959; that the average cost of each such injury was \$27.98; that the number of suits pending on account of accidents reported eighteen months prior to date of statement was 5,124, and that the average cost of such suits was \$517.78. The net reserve for suits under the law was on December 31, 1910, \$2,644,019, and for injuries reported was \$11,088,102, or a total reserve for suits and injuries of \$13,732,121.

TABLE I. *Total number of suits defended by each company under liability policies during ten years ending December 31, 1910; the total number of such suits settled; the percentage of suits settled to the total number of suits brought; the number of suits pending on December 31, 1910, and the percentage of suits pending to the total number of suits brought. The*

column "Total Number of Suits Brought" was obtained by adding the settled suits reported on August 31, 1910, to the pending suits on December 31, 1910, and gives the best obtainable basis for a ten-year period. This table gives a fair statement of suit experience of companies named therein, inasmuch as the period between August 31, and December 31, 1910, comprises only four months out of a total of 120 months.

Company.	Total number of suits brought.	Number of suits settled.	Percentage of suits settled to total No. of suits brought.	Number of suits pending.	Percentage of suits pending to total No. of suits brought.
Etna Life Insurance Co.	11,777	10,192	86.54	1,585	13.46
American Fidelity.....	1,149	700	60.93	449	39.07
Casualty Co. of America.....	3,549	2,874	80.98	675	19.02
Employers' Liab. Assur. Corp.	8,320	7,249	87.13	1,071	12.87
Fidelity & Casualty.....	6,733	5,652	83.94	1,081	16.06
Frankfort M., A. & P. G.....	4,780	4,271	89.35	509	10.65
General Accident Assur. Corp.	2,319	1,726	74.43	593	25.57
London Guarantee & Accident	5,028	3,989	79.33	1,039	20.67
Maryland Casualty.....	7,824	6,909	88.31	915	11.69
New Amsterdam Casualty.....	2,287	2,022	88.41	265	11.59
Ocean Accident & Guarantee..	4,507	3,888	86.26	619	13.74
Standard Accident.....	2,744	2,339	85.24	405	14.76
Travelers Insurance Co.....	21,447	17,826	83.11	3,621	16.89
United States Casualty.....	2,444	2,270	92.87	174	7.12
Totals and average.....	84,908	71,907	84.69	13,001	15.41

TABLE II. Number of suits pending under liability policies of each company December 31, 1910, by years in which the policies were issued.

Company	Prior to 1901	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	Total for 10 years
*Etna Life Insurance Co.	..	..	..	9	18	43	93	147	326	560	389	1,585
†American Fidelity.....	..	..	..	..	..	2	15	30	89	162	151	449
†Casualty Co. of America.....	..	..	..	..	7	8	15	49	104	292	200	675
Employers' Liab. Ass. Corp.	2	1	3	5	12	22	63	107	195	417	246	1,071
Fidelity & Casualty.....	17	8	11	11	17	42	70	125	214	378	205	1,081
Frankfort M., A. & P. G.....	3	3	7	7	13	19	25	46	106	187	96	509
General Acc. Assur. Corp.....	..	..	1	1	2	1	19	48	97	259	165	593
London Guar. & Accident.....	4	3	8	11	24	33	75	109	183	422	171	1,039
Maryland Casualty.....	7	4	3	8	11	11	30	78	173	400	197	915
New Amsterdam Casualty.....	..	..	..	1	4	1	4	25	38	112	80	265
Ocean Accident & Guar.....	1	..	2	3	11	9	24	68	117	246	139	619
Standard Accident.....	2	..	2	9	..	9	17	35	73	162	98	405
Travelers Insurance Co.....	6	4	14	40	46	167	290	470	704	1102	784	3,621
United States Casualty.....	..	..	1	1	2	4	3	19	31	84	29	174

*Began writing liability insurance 1902. †Began writing liability insurance 1903.

TABLE III. Number of suits pending on accidents reported eighteen months prior to December 31, 1910; average cost of each such suit; reserve for suits as

*required by law; number of injuries reported during eighteen months to December 31, 1910; average cost of each such injury; gross reserve for injuries reported as required by law; payments made on account of injuries reported within eighteen months; net reserve. Companies that have been writing liability insurance for less than ten years (marked *) are required by law to take the average of those companies that have been writing liability insurance for ten years or more.*

Company.	Average cost of each suit.	No. of suits pending on accidents reported 18 months prior to date of statement.	Reserve for suits as required by law.	No. of injuries reported during 18 months to date of statement.	Average cost of each injury reported.
Etna Life Insurance Co.*	\$513.14	660	\$338,672.40	97,455	\$27.55
American Fidelity*	513.14	109	55,932.26	9,532	27.55
Casualty Co. of America*	513.14	164	84,154.96	31,903	27.55
Employers' Liab. Assu. Corp.	503.81	381	191,951.61	103,730	22.33
Fidelity & Casualty	687.12	455	312,639.60	49,938	40.27
Frankfort M., A. & P. G.	472.75	215	101,641.24	30,412	24.88
General Accident Assu. Corp.	414.57	173	71,720.61	18,894	30.05
London Guarantee & Accident	610.36	427	260,623.72	63,585	23.02
Maryland Casualty	445.53	299	133,213.47	61,036	31.28
New Amsterdam Casualty	352.36	59	20,789.24	8,862	28.79
Ocean Accident & Guarantee	621.11	183	113,663.13	54,451	29.48
Standard Accident	489.57	151	73,925.07	35,731	22.78
Travelers Insurance Co.	481.51	1,810	871,533.10	182,345	29.63
United States Casualty	383.13	38	14,558.94	23,103	23.45
Total and averages	\$517.78	5,124	\$2,644,019.36	770,959	27.98

Company.	Gross reserve for notices as required by law.	Deduct payments on account accidents reported within 18 months.	Net reserve as required by law.
Etna Life Insurance Co.	\$3,023,557.65	\$2,059,752.12	\$963,805.53
American Fidelity	318,538.86	191,509.45	127,029.41
Casualty Co. of America	963,082.61	644,151.99	318,930.62
Employers' Liability Assu. Corp.	2,508,242.51	1,429,533.30	1,078,709.21
Fidelity & Casualty	2,323,642.86	1,092,889.68	1,230,753.18
Frankfort M., A. & P. G.	858,991.81	504,056.46	354,935.35
General Accident Assu. Corp.	639,485.31	507,881.17	131,604.14
London Guarantee & Accident	1,724,350.42	928,404.96	795,945.46
Maryland Casualty	2,042,419.55	1,079,293.87	968,125.68
New Amsterdam Casualty	275,926.22	187,195.40	88,730.82
Ocean Accident & Guarantee	1,718,878.61	786,577.52	932,301.09
Standard Accident	887,467.21	504,834.28	382,632.93
Travelers Insurance Co.	6,274,416.45	2,612,016.34	3,662,399.11
United States Casualty	556,324.29	498,424.06	57,900.23
Total and averages	\$24,114,623.36	\$13,026,520.60	\$11,088,102.76

TABLE IV. Total number of injuries reported between January 1, 1906, and August 31, 1910; amount paid on account of such injuries; average cost of each injury

reported; number of suits settled; amount paid on suits settled; average cost of each suit settled.

Company.	No. of injuries reported.	Am't paid on injuries reported.	Ave. cost of each injury reported.	No. of suits settled.	Am't paid on suits settled.	Average cost of each suit.
Etna Life Insurance Co.	219,671	\$5,719,900	\$26.04	5,528	\$2,630,851	\$475.91
American Fidelity.	13,793	355,044	25.75	590	152,699	258.81
Casualty Co. of America.	69,154	1,703,561	24.00	1,753	601,680	343.00
Employers' Liab. Assu. Corp. .	237,654	4,231,757	17.81	3,258	1,553,632	476.87
Fidelity & Casualty.	114,775	3,220,207	28.06	1,673	1,111,839	664.58
Frankfort M., A. & P. G.	66,550	1,457,164	21.89	1,466	584,573	398.76
General Accident Assu. Corp. .	35,745	870,037	24.31	1,047	326,001	311.36
London Guar. & Accident.	130,718	2,715,313	20.77	1,652	883,227	534.64
Maryland Casualty.	112,046	2,825,260	25.21	2,458	1,064,146	432.93
New Amsterdam Casualty.	19,885	640,967	32.33	749	278,316	371.58
Ocean Accident & Guarantee. .	102,915	2,466,404	23.97	1,745	896,196	513.58
Standard Accident.	79,472	1,602,463	20.16	1,073	488,663	455.42
Travelers Insurance Co.	413,301	8,378,978	20.27	8,307	3,677,839	442.74
United States Casualty.	42,902	955,300	22.27	999	345,896	349.24
Totals and averages.	1,658,581	\$37,142,355	\$22.39	32,298	\$14,598,558	\$451.99

TABLE V. *Total premiums received by each company during ten years ending December 31, 1910; total number of suits pending on December 31, 1910, under policies issued by each company; average amount of premiums received by each company during ten years ending December 31, 1910, in proportion to each suit pending, and number of outstanding suits brought by the assured against each company under liability policies. The companies marked * have not been writing liability insurance for ten years, and the figures given cover the business they have written to December 31, 1910.*

Company.	Total premiums reported.	No. of pending suits.	Average am't of premium per suit pending.	Suit by assured pending against companies.	Year company began writing liability insurance.
Etna Life Insurance Co.*.	\$21,934,908	1,585	\$13,839	10	1902
American Fidelity*.	1,921,284	449	4,279	1	1903
Casualty Co. of America*.	6,964,696	675	10,318	2	1903
Employers' Liability Assu. Corp. .	23,420,303	1,071	21,867	4	1886
Fidelity & Casualty.	19,231,942	1,081	17,791	4	1888
Frankfort M., A. & P. G.	8,112,069	509	15,937	6	1896
General Accident Assu. Corp.	4,206,013	593	7,093	2	1899
London Guar. & Accident.	13,711,793	1,039	13,197	7	1892
Maryland Casualty.	15,297,907	915	16,719	5	1898
New Amsterdam Casualty.	3,697,743	265	13,954	3	1899
Ocean Accident & Guarantee.	12,164,069	619	19,651	8	1899
Standard Accident.	7,622,490	405	18,821	1	1889
Travelers Insurance Co.	37,987,413	3,621	10,494	9	1889
United States Casualty.	4,994,152	174	28,702	..	1895
Totals and averages.	\$181,276,782	13,001	\$13,943	62	

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CHAPTER XLIV
LIABILITY POLICY FORMS

BY R. S. KEELOR, M. D.

IT IS unnecessary in a work of this character to explain what the term policy or policy form means but it may be briefly stated that a liability insurance policy is a contract by the terms of which the insurance company as the first party, agrees for a consideration called the premium, to indemnify the assured, called the second party, against loss arising from claims made by third parties on account of damages sustained or alleged as a result of bodily injury and/or death attributable to negligence imputable to the assured because of the conduct of his employes or directly chargeable to him because of his personal conduct in the premises. The policy is based upon a proposal or application in which the elements of the risk are set forth and since such proposal becomes an essential part of the indemnity contract, any discussion of the several forms of liability policies in use should include a consideration of the proposals or applications and the method of their preparation.

A liability insurance policy is one of the very few insurance contracts in which there is no privity of contract between the company issuing it and the party making claim; the assured, in whose interest it is issued, is obligated by its terms and conditions to co-operate with the company in defending against any claim for damages but if a damage claim becomes a loss by reason of an award of damages by a court of law and the payment of the loss by the assured or by the company intervening in his behalf, the indemnity feature of the contract becomes operative.

The policy forms used by the several companies writing this class of business in the United States since 1887 have been made instrumentalities of competition and for this reason there has at times been considerable variation in the forms used by different companies. At the beginning, policies were issued for limits of \$1,500 in respect of injury sustained by one person and \$5,000 in respect of injuries sustained by several persons in any one accident, while the policies contained a fixed maximum limit for the policy period. The policies issued during the first decade provided insurance "*against the legal liability of the Assured arising from bodily injuries resulting from negligence.*" Experience with policies so framed having been unsatisfactory, changes in the phraseology and general arrangement of policy forms appeared in 1896 and numerous changes intended largely, if not entirely, for competitive purposes have since been made by one or another of the companies and soon adopted by other companies, until at this time there is substantial uniformity in the scope of the liability policies issued, although there are some variations in the phraseology employed.

The liability policies issued at this time are indemnity contracts, the undertaking of the insurance company being found in the insuring clauses forming the heading of the policies while the general agreements or conditions which follow the insuring clauses set forth the *modus operandi* to be observed by the company and the policyholder in their contractual relations with each other. Taking the employers' liability policy as a type, it may be stated that the most acceptable form of policy at this time is one that provides in the insuring clauses for indemnity against loss arising or resulting from claims upon the assured for damages on account of bodily injuries and/or death, suffered or alleged to have been suffered from accident occurring while the policy is in

force, by any employe or employees of the assured by reason of the operation of the trade or business described in the schedule, which is substantially a copy of the proposal or application. In addition to this provision for indemnity against loss, the insuring clauses contain provision for the payment by the company of the cost and expenses attending the investigation, adjustment and settlement of claims upon the assured for damages and also provision to defend any legal proceedings to enforce such claims and to pay all costs taxed by the courts in such proceedings and the interest accruing after entry of judgment upon such part thereof as shall not be in excess of the limits of liability named in the policy.

Reimbursement of expenditures made by the assured for first medical aid or emergency, medical service rendered at the time of an accident being merely a collateral undertaking which is sometimes eliminated and at other times replaced by a special provision for full medical aid, should not be made a feature in the insuring clauses and, as a matter of fact, this provision is regularly assigned to a place in the general agreements or conditions of the policy.

If in any case it is desired to cover workmen's compensation as well as the employer's liability as defined by the law of negligence, this may be accomplished by attaching to the employer's liability policy a rider or endorsement, because the usual form of employers' liability policy covers only loss arising from damages awarded on account of proven negligence upon the part of the assured, while workmen's compensation laws provide certain fixed sums or rates of compensation for specified injuries irrespective of any fault or negligence on the part of the employer.

The operation of a trade or business and the maintenance of the plant involve the risk of accidents resulting

in injuries which may be made the basis of claims for damages and this is what is insured against, the measure of the risk being the payroll (in the general liability policy to which we shall refer later on, the physical aspect of the property owned or controlled is added to the payroll as the measure of the risk). Employers' liability policies were at one time so worded as to only cover accidents caused by and suffered by persons whose compensation was included in the estimated payroll upon which the premium was based. Recognition of the fact that all accidents arising from the operation of the trade or business should be covered and of the fact that the origin and the direct cause of an accident may not be identical, has resulted in the use of phraseology which excludes accidents suffered by employees whose compensation is excluded in the schedule, but the policy is silent as to accidents caused by or originating from the participation in the operation, of persons whose compensation is not included in the schedule. The risks offered for insurance represent operations conducted by individuals or by co-partnerships or by corporations. The earnings of individuals or co-partners are in the nature of profits on investment rather than wages and these earnings, therefore, do not figure in the payroll in computing the premium for an employers' liability policy. In the case of the corporation, the executive officers are dealt with as representing the personal element of ownership in the trade or business and their compensation is, therefore, eliminated from the schedule when desired, but with the proviso that accidents happening to them shall be eliminated from the coverage.

A liability policy limits the indemnity to be paid by the insurance company; the so-called "standard limits" being \$5,000 in respect of damages arising from injury to one person and \$10,000 in respect of damages arising from injuries to several persons in any one accident and

the rates printed in the manuals or rate books invariably have reference to these limits but provision is made for increasing or diminishing the rates for limits larger or less than the standard limits. These limits, it should be remembered, are exclusive of all expenses, costs and interest accruing after the entry of judgment for damages and the limits stated in the policy may be brought into play a number of times during the term of a policy. That is to say, the policy is an open one covering all accidents happening while it is in force.

We shall now consider the several liability policy forms in use and their application to the underwriting of risks, including the essential features in the preparation of the schedules. The manufacturers or shop form of policy is used when it is desired to cover the operation of a trade or business conducted at a fixed location—such as a cotton mill, a machine shop, a laundry or a coal yard.

Employers' Liability Policy

The scope of the coverage of this form of policy is shown by the insuring clauses introduced here for the purpose of illustrating the arrangement and the phraseology employed:

“ In consideration of the premium herein provided and of the statements made in the schedule, the A B C Company, hereinafter called the Company, does hereby agree:

“(1) To indemnify the assured described in statement (1) of the schedule *against loss arising or resulting from claims upon the assured for damages* sustained on account of bodily injuries and/or death caused by any accident occurring while this policy is in force, and suffered or alleged to have been suffered by any employe or employes of the assured, whose compensation is not excluded in the schedule, by reason of the operation of the trade or business designated therein, and while on or

about the premises therein designated or upon the ways immediately adjacent thereto, or by reason of the actual work of making ordinary repairs for the maintenance of buildings or the renewal of existing mechanical equipment upon the said premises, wholly by such employes, provided that this agreement shall apply to bodily injuries and/or death suffered by drivers, drivers' helpers, salesmen, collectors or messengers whose compensation is not excluded in the schedule and who are engaged at the time of the accident in the service of the assured, about said premises or elsewhere, but in connection with the operation of the trade or business described, excluding, however, constructive operations, installations and mechanical demonstrations.

“(2) To investigate notices of bodily injury and/or death, negotiate settlement of resulting claims as may be deemed expedient by the company and to defend at its own cost any suit, whether groundless or not, brought against the assured and based upon bodily injuries and/or death suffered or alleged to have been suffered by any person or persons described in clause (1) (above), at any of the places and in the circumstances therein described, and as the result of an accident occurring while this policy is in force, and

“(3) It is further agreed that the company's liability for loss in respect of bodily injuries and/or death is limited to the amounts as provided in statement () of the schedule and in addition to such limits, the company will pay such medical expense as is provided for in clause () of the policy or in any endorsement upon the policy amending such provision, and any expense which it may incur in the performance of the services herein provided for, including costs taxed against the assured by the court, and interest accruing after entry of judgment, upon such part thereof as shall not be in excess of the limits provided for in statement () of the schedule.”

The employers' liability policy, until quite recently, covered accidents occurring by reason of the use or

maintenance of factory elevators in buildings occupied solely by the assured for manufacturing purposes, no specific premium charge being made for so-called "factory elevators." It has, however, been found that 10 per cent or more of the losses paid on manufacturing risks originated in elevator accidents and in order to place the burden of this element of loss where it belongs, factory elevators are now scheduled and charged for. Such elevator coverage may be included in the employers' liability policy by endorsement but the issue of a concurrent elevator policy is preferable.

Alterations in, additions to, or the construction or demolition of any building, structure or plant or the installation of mechanical equipment in any building or part of any building not previously occupied by the assured are not covered by this form of policy. It is also a condition of this form of policy that there shall be no coverage as respects children under the age limit fixed by law.

The compensation stated in the schedule as a basis for the advance premium is merely estimated; it is rarely overestimated but is quite frequently very much underestimated; in the general agreements of the policy, provision is, however, made for payroll statements to be furnished by the assured and for auditing of payrolls by the company and in this way the actual earned premium is ascertained and adjusted by collection or refund upon the part of the company, as the circumstances may call for.

We come now to the preparation of the schedule which becomes a part of the policy and a very important part of it, too. The first statement in the schedule should be arranged to disclose the identity of the assured; if an individual, his full name and not merely his initials should appear; if a firm or co-partnership, the identity of the persons as well as the name of the firm, should ap-

pear; if a corporation, the fact should be disclosed and if a trustee, the name of the estate or party for whom he is trustee should be included.

With respect to the limits of the company's liability, referred to in one of the insuring clauses, if it is desired to so limit the company's liability that the limits named shall without question not be affected in the event that two or more interests are named as assured, the phraseology usually employed may fail to accomplish the purpose. Companies that make it a rule to reinsure all liability in excess of \$10,000 and \$20,000 limits do not hesitate to write policies for limits of \$10,000 and \$20,000 with two or three interests named as assured, retaining the entire liability without thought of reinsuring the excess, all of which would seem to indicate that this point has not had the careful consideration which it should have. The following statement provided in the schedule will limit the liability irrespective of the number of interests insured: "The company's limit of liability, whether insuring only one or more than one interest, under this policy (exclusive of expense, costs and interest referred to in the insuring clauses of the policy) for bodily injuries and/or death of one person shall be \$. and subject to that limit for each person, the company's total liability (exclusive of such expenses, costs and interest) on account of any one accident causing injuries and/or death of more than one person shall not exceed \$." When, however, an adequate premium is obtained for covering additional interests, there is no good reason for restricting the company's liability to the amounts named for one interest.

The statement devoted to the description of the trade or business to be insured calls for close attention to underwriting rules. The following exhibit is so arranged as to afford an analysis of the risk and of the rates applied. Certain features which entail special hazards are

grouped separately. If the company issues a concurrent teams policy, the drivers' wages are not included in the schedule of the employers' liability policy but the wages of drivers' helpers must be included regardless of these circumstances. If a concurrent teams policy is not issued, the compensation of all drivers should either be included in the schedule of the employer's liability policy or specifically excluded with a provision that such policy shall not cover accidents to drivers. The compensation of clerical office employees, traveling salesmen (not local outside salesmen) and that of the president, vice-president, secretary and treasurer of a corporate assured may be excluded from the schedule but in either case the exclusion should carry with it the provision that accidents to such persons shall not be covered by the policy. The exhibit (see page 221) conveys the writer's idea respecting the way in which the trade or business (the operation of which is the subject of insurance) should be described.

Following this exhibit of the operations which are to be covered by the policy, provision should be made in the schedule for such exclusions of compensation as are proper, in the event that the assured has exercised the option of making any such exclusions.

Public Liability Policy

The public liability policy (shop form) affords protection to the assured as respects claims for damages on account of bodily injuries and/or death suffered or alleged to have been suffered by persons not in his employ but arising out of the operation of the trade or business which he conducts at the place or places mentioned in the schedule of the policy, or by reason of the actual work involved in the maintenance of the plant or of its mechanical equipment. This form of policy does not cover injuries caused by reason of the use or maintenance on

Town, Street and Number where Trade or Business is Conducted.	Classification of Trade or Business Operations to be Insured.	Estimated Average Number of Employees 16 Years of Age or over	Estimated Total Wages and other Compensation for 12 months	Rate per \$100 of Wages	Estimated Premium
No. 300 Main Ave., New York	Manufacturing Stoves (sheet iron)	200	\$100,000	35c	\$350.00
Special Features not included in above estimates:	Persons 14 to 16 years of age.	none			
	Wrecking or demolition of any structure.	none			
	Hand-fed Stamping, Punching, Pressing, Cutting or Embossing of Metal, if separately rated in manual.	10	3500	7.50	262.00
	Railroads, switches, or sidetracks operated by Assured (other than handpower) connected with track of any railroad company . . Drivers not enumerated in concurrent Teams Policy and Drivers Helpers.	none 12	 7200	 .35	 25.20
Minimum Premium for one year \$25.00			Advance Premium		\$637.20

the premises of any elevator or hoist or of any horses or vehicles, or the making of additions to, alterations in, or the construction or demolition of any building, structure or plant, or the installation of mechanical equipment in any building or part of a building not previously occupied by the assured. The general plan of this policy and of its schedule is precisely like the employers' liability policy, excepting that any exclusion of payroll other than that of the president, vice-president, secretary and treas-

urer, results only in the elimination of liability on account of accidents *caused* by such persons.

General Liability Policy

There is, of course, considerable difference of opinion as to what should be properly included under the covering of a general liability policy, and the policies of the different companies differ considerably in their covering. In the earlier history of liability insurance, the general liability policy covered the assured's liability to his employees or to the public arising out of accidents occurring by reason of the operation of the trade or business due to any defect in the construction, or negligence in the maintenance of the premises, the use of elevators or steam boilers on the premises, or the use of teams anywhere in the service of the assured, and two companies at this time issue general liability policies covering specifically all of these features, excepting only the steam boiler hazard, which is not enumerated, but which is not specifically excluded. The better practice is, in the writer's opinion, to eliminate the teams entirely from this form of policy.

The measure of the hazard involved in a general liability risk is (1) the payroll for the care and custody of the building and for the operation of the trade or business conducted by the assured, upon the premises, if any; (2) the street frontage and the area of the several floors in the control of the assured; (3) the elevators, if any, maintained and operated by the assured. If the assured is merely a tenant occupying a portion of the building, the payroll will be limited to the operation of his trade or business while the frontage and area charge will be limited to his own occupancy and unless he operates the elevator or elevators, there will be no charge against him for this feature.

A general liability policy is not issued to cover a risk

involving manufacture of any kind, the risks for which this form of policy is applicable being scheduled in all liability manuals without a rate for public liability, thus implying that the hazard of accidents to the public is to be charged for on the basis of frontage and area rather than payroll.

The owner of a building leased to others, the entire care and custody of the tenantable portion of the building resting with the lessees, may be provided with a "contingent" or landlord's protective policy and in consideration of a warranty that these conditions shall be maintained, the premium charged is reduced to one-half of the full rate for a general liability policy.

An adaptation of the general liability policy form is used when the subject of the insurance is a theatre or a public hall, but the seating capacity alone is taken as the measure of the hazard so that in lieu of charges for payroll, frontage and area, there is but one charge—that upon the number of seats, the rate charged depending more or less upon the construction and equipment of the theatre.

Teams Liability Policy

The teams liability policy is designed to indemnify the party in whose interest it is issued, against loss arising from claims on account of bodily injuries and/or death suffered by reason of the ownership, maintenance or use of any team described in the schedule. The provisions heretofore referred to respecting the handling of claims and suits and the payment of expenses, costs and interest by the company are also made a part of this policy.

It will be noticed that the teams policy is in effect both an employers' liability and a public liability policy, intended to cover accidents to the driver and his helper while handling the horse or the vehicle or both and likewise accidents to the public. As now written, all teams

policies cover the loading and unloading of vehicles without additional premium and accidents caused by horse, vehicle, driver or driver's helper, come within the protection of the policy. A satisfactory definition of the term "loading and unloading" and of the term "driver's helper" would seem to be something easily reached, but underwriters who have given any attention to the accidents reported under teams policies know to the contrary. "Loading and unloading" is a hazard which necessarily varies with each particular load transported by the same team, and the hazard varies more widely, perhaps, as between several teams used in the same kind of business but by different persons; and, obviously, no satisfactory means of estimating these varying hazards has yet been devised; and it must, therefore, follow that present methods of premium rating, as applied to this hazard, are defective. Sometimes the agent will encounter a coal dealer, for instance, who is under the impression that a teams policy may properly be written to cover two or more helpers with each team, and that if a load of coal is dumped on the sidewalk, and thence carried into the house by these helpers after the team has departed the "loading and unloading" feature of the teams policy should protect him in the event that an accident is attributed to the misconduct of these helpers. If a load of coal is chuted into a coal hole or a cellar window, the act of unloading the vehicle is completed when the last of the coal has passed into the coal hole or cellar window; and it seems unreasonable that the term "unloading" should be extended in the manner above indicated, because the unloading is, in such cases, really completed when the coal is dumped on the sidewalk, and the coal dealer should protect his liability, arising from possible negligence of his employes in carrying the coal from the sidewalk, if he desires to be so covered, by means of employers' and and public liability policies of the contractors' form.



The premium rates named in liability manuals for teams insurance apply to the standard limits of \$5,000 and \$10,000 and while larger limits may be written at increased rates provided for in the manuals, limits less than those here named are not written in connection with this form of policy.

Property damage insurance is added to the teams policy by endorsement, when wanted; an additional premium equal to 20 per cent of the regular teams rate, is charged for this endorsement which covers losses arising from liability of the assured for damages by reason of injury to or destruction of property of others and not in his custody, due to the maintenance or use of teams described in the schedule of the policy.

Contractors' Liability Policy

The so-called contractors' liability policy, whether the employers' form or the public form, is issued to cover mining, quarrying or constructive operations, installations, repair work or public service, either in connection with so-called shop work carried on by the assured at a fixed place of business or entirely apart from any such shop work. The coverage includes only such accidents as occur in and during the prosecution of the work described in the schedule. As applied to constructive operations this form of policy covers anywhere within the territorial limits stated in the schedule. In referring to the contractors' liability policy, the underwriter usually has in contemplation its application to the constructive operations of contractors and as respects such operations the policy may be issued to cover a specific contract which the assured has undertaken at a place stated in the schedule, or to cover any work which the assured may undertake anywhere within the state or states named in the schedule, in which case, any difference in rate, as applied to work to be done in the different states, must be

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shown. If the net rate, according to the manual, is the same for all of the states in which the assured proposes to operate, of course only one rate will be shown for the group, but if the rates vary, the states must be grouped, and the rates are then to be stated in the schedule for each group. If the policy is subsequently extended by rider or endorsement to cover in other states, the correct premium rate for work done in such added state must be given in the rider or endorsement, whether it is identical with the rate named in the original policy or not.

A policy written to cover a specific contract should be made to expire about the time when the contract is expected to be completed, so that the payrolls may be promptly audited and the premium adjusted and collected. If the assured shall not have completed his work at the expiration of the policy period, further protection may then be provided by a rider extending the policy period, but such extension, for obvious reasons, should not be unduly prolonged.

In issuing contractors' liability policies, each distinct manual classification in respect of which the assured desires covering is separately stated, and care should be exercised in all cases that in their enumeration the language used in the schedule to describe the risk shall designate the character of the operations, rather than the name usually applied to the skilled mechanics who participate in the work; as an illustration: "Carpentry work-construction and repair away from shop (not grain elevator construction)"; "Masonry, in or on buildings" (excluding detached chimneys); "Plastering"; "Plumbing—shop and outside—(including the making of house connections)"; "Painting, away from shop." Some companies' manuals erroneously classify "carpenters" instead of "carpentry," and "masons" instead of "masonry," and "plumbers" instead of "plumbing." The term "carpentry," for instance, refers to a business

that requires carpenters and helpers and laborers in the performance of the work, while the term "carpenters" includes only the skilled mechanics, if a strict construction is insisted upon, and in that case the helpers or laborers might be eliminated from the payroll in the final adjustment of the earned premium.

The several rules referred to when discussing the preparation of the schedule for the shop form of policy apply with equal force in the preparation of the schedule for the contractors' form of policy, excepting that in the shop policy a flat or average rate is usually applied to the business of the assured, while in the contractors' policy each kind of work is separately rated. This is, perhaps, an appropriate place to note that regardless of the kind of policy or policies issued, the theory of the divided payroll is that there are two or more distinct hazards, and that in the conduct of the assured's business the one does not in any manner affect the other; while the theory of the undivided payroll is that if several hazards are involved the greater has been considered in making the rate to cover all of them. Violence is, however, sometimes done to these theories in practice. For instance, in some stone quarry and cutting risks, where the cutters are given a much lower rate than quarrymen, but actually work in the quarry and are exposed to its most serious risks; or in some knitting mill risks where the assured not only makes paper boxes and possibly packing cases for his own goods, but actually supplies his neighbors, and gets his liability insurance at the rate for knitting mills. Obviously in the first mentioned case all persons who are required to be in the quarry, whether quarrymen or stone-cutters, should be charged for at the quarry rate, and in the second case mentioned such distinct hazards as paper-box making or packing-case making should be charged for at such rates as the schedule provides for these hazards. Some underwriters contend that box or packing-case

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making in such cases, being a mere incident of the assured's business, should be covered at the regular rate for the business in which he is engaged but in view of the fact that this very considerable increase in hazard is present in only a small percentage of the risks, it is unfair to the majority of the risks in the same classification to charge them the same rate that is charged to those whose risks are made more hazardous by reason of the so-called incidental box and/or packing-case making.

A contractors' liability policy may be written for one year with the privilege of making monthly or quarterly settlement of actual earned premiums, as agreed upon when the policy is issued. A deposit premium, as an evidence of good faith, is, however, required and this deposit should be commensurate with the size and character of the risk, and in no case less than the regular minimum premium for contractors' policies. The schedule is prepared in the usual way, omitting, however, the estimated payroll but attaching an endorsement providing for the periodical payroll statements agreed upon and payments are then made at the rates shown in the schedule, the deposit premium being applied in the final settlement at the expiration of the policy period.

Marine or Vessel Policy

Marine or vessel liability insurance is intended to cover the operation of vessels or boats used for the transportation of passengers, or of freight, or of both, or for towing purposes. The payroll is the basis of the premium charge and the policy may cover only the employees or both employees and the public, the scope of the coverage being shown in the following quotation from the insuring clauses of the employers' and public policies:

“ Against loss resulting from claims upon the assured for damages on account of bodily injuries and/or death caused by any accident occurring while this policy is in

force, and suffered or alleged to have been suffered by any person or persons by reason of the use or maintenance of any vessel named in the schedule, or of its appliances or attachments, in the operation of the trade or business described in said schedule, or by reason of the actual work of making ordinary repairs to such vessel, or its appliances, attachments or mechanical equipment, or the replacement of cordage, if such repairs or replacement is done wholly by persons whose compensation is included in the schedule."

This form of policy does not cover loss nor expense arising on account of bodily injuries and/or death (1) suffered by any passenger of the assured; (2) caused (a) by making structural changes in or alterations to any vessel or by the demolition thereof; (b) by the use of any machinery, mechanical appliances, or steam boiler not permanently maintained within or upon such vessel; (c) by the use of any draft animal; (3) caused or suffered by any employe whose compensation is excluded in the estimate set forth in the schedule, but this exclusion shall not apply to the assured if an individual or a co-partnership, nor to the president, vice-president, secretary or treasurer if assured is a corporation, provided that the compensation of all such persons serving as officers of any vessel named in the schedule is included in such estimate; (4) caused or suffered by any person employed by assured in violation of law as to age, or under the age of fourteen years, if there is no legal age limit.

Marine liability policies are issued to cover ferryboats, fishing vessels, ocean and coast-wise steamers or sailing vessels, river and sound steamers, steamers or sailing vessels on the Great Lakes, tow or tugboats and barges, and the minimum premium to cover any one vessel is \$25. The schedule requires that the name of the vessel, its character, the business for which it is used, number of employes and their estimated compensation, and the waters in which the vessel is to be used shall be stated, and if

several vessels owned or operated by the same assured are to be covered, each vessel must be described in the manner herein indicated, whether one policy covering all of them or several separate policies are issued.

Contingent or Protective Policies

The so-called contingent liability policy was, perhaps, invented as a clever device for the collection of additional premium from owners of property or general contractors about to engage in any constructive operation or in the wrecking or removal of any building or structure. It was called "contingent" upon the stated theory that an owner or contractor might in such circumstances be held legally liable for accidents, on account of some unforeseen contingency although the actual negligence from which the accident arose should be shown to be the negligence of some subcontractor. The common law does not recognize such a thing as "contingent liability" and this name is even at this time a misnomer when applied to a policy, the main purpose of which is to protect the assured from annoyance and expense of defending himself against claims based upon circumstances in respect of which he really has no legal responsibility, but there is more reason for the existence of the protective policies now than formerly existed, because there is a tendency in recent legislation to hold the owner or general contractor liable under *statute law* for certain accidents, notwithstanding his having contracted with other parties to perform the work.

This form of policy is sold as a protection against claims upon the assured for damages on account of bodily injuries and/or death caused by accidents happening during the continuance of work described in the schedule and performed by any independent subcontractor engaged in the work.

It is stipulated in the policy that if the assured retains any portion of the work to be done through his own em-

ployes, he shall carry employers' and public liability insurance thereon under separate policies of the contractors' form, with the company, and that all work not so retained by him shall be done under written contract with subcontractors and that he shall not voluntarily assume any liability for loss on account of bodily injuries and/or death suffered by any person as a result of the negligence of any subcontractor.

The premium for a protective policy, whether intended to cover the owner of property or a general contractor, is based upon the total cost of the work, less any payroll which the assured may have on account of work retained by him and upon which payroll he pays premium for the contractors' policies issued concurrently with the protective policy. The minimum premium is, in any case, \$25.

Elevator Policy

This form of insurance is intended to protect owners or lessees of elevators as respects loss imposed upon them, by reason of their liability for damages on account of bodily injuries and/or death caused by any accident occurring while the policy is in force, suffered by any person or persons while in or on, entering upon or alighting from, the car or platform of such elevator described in the schedule, for which a charge is included in the premium; or by means of such elevator, its shaft or hoist-way, or the attachments or appurtenances contained therein, including bodily injuries and/or death caused by reason of the actual work of making ordinary repairs on such elevator; and the term "elevator" as provided for in the policy, includes escalators, moving platforms and other hoisting devices.

This form of policy also provides against the cost of defense in any suit, whether groundless or not, brought against the assured, and based upon bodily injuries and/or death, suffered or alleged to have been suffered

by any person or persons, as described above, at the places and in the circumstances there described, and as the result of any accident occurring while the policy is in force. There is also a collateral undertaking upon the part of the company issuing the policy to make regular and periodical inspections of the elevator; and in the case of passenger elevators, these inspections are usually made at intervals of from thirty to ninety days, and depending, as to frequency, upon the extent and character of the service in which the elevator is used.

The premium is based on the number and kind of elevators to be insured and is computed either on an annual basis or on a three-year basis; and in the latter case, a discount of 10 per cent is usually allowed from the full premium for three years; and payments for a three-year policy may be made either in advance or in three instalments, 50 per cent being payable the first year, 30 per cent the second year and 20 per cent the third year.

Elevators are variously known as "passenger elevators," "passenger and freight elevators," "factory" or "freight elevators," which are used in manufacturing plants exclusively; "sidewalk elevators," "one-story elevators," within the walls of a building, running not more than twenty feet in height; "private house elevators" used in dwellings occupied by one family only, and "hand-hoists," a term applied to lifting appliances through hatchways operated by hand with rope or chain, in addition to which there are "moving inclined ways" or "escalators" which may be installed inside or outside of buildings, and "sidewalk chutes."

The premium rates for elevators of the different classes above mentioned will be found in all liability manuals, and are supposed to apply upon limits of \$5,000, as respects death or injury to one person, and \$10,000, as respects any accident involving several persons, the full rate for the limits stated being charged for each elevator

written; but one policy may be written to cover several elevators, no reduction, however, being made in the rate per elevator in such instances. Lower limits than \$5,000 and \$10,000 are not written upon elevators, because it is reasoned that a reduction in the net premium received by the company would not afford sufficient margin for proper and satisfactory inspections. The factory elevator rate applies only when the employers' liability, public liability and elevator risks are written concurrently, all policies to expire simultaneously, and when the factory is owned or occupied by one interest, individual, estate or corporation for manufacturing purposes exclusively. When a passenger or freight elevator has been insured by a given company, additional insurance may be furnished upon the same elevator to other persons in interest, at a reduced premium, as provided for in the schedule of rates to be found in the manual; but no company will take such additional insurance upon any elevator, unless it is also carrying the first policy thereon.

Automobile Policy

The automobile policy is in itself a contract to indemnify against loss by reason of claims for personal injury, with, of course, the collateral undertaking of providing defense against any claims for such injuries whether groundless or not, and in connection with this policy a property damage endorsement is furnished when desired by the assured, the coverage under which endorsement applies to claims for damage done to the property of others than the assured but not in his own care or custody nor in the care of any of his agents or employees.

Entirely apart from the hazard of personal injury and damage to the property of others, incident to the maintenance and use of automobiles, the underwriter is called upon to insure against damage to the assured's own car by reason of its coming in violent contact with

some other object, such coverage being known as collision insurance.

Going back to a consideration of the automobile policy covering personal injuries, it should be understood that this policy affords protection against all claims upon the assured for damages on account of bodily injuries and/or death accidentally suffered or alleged to have been suffered while the policy is in force, by any person or persons by reason of the ownership, maintenance or use of any of the automobiles named and enumerated in the schedule.

The premium rate is based upon what is known as the insurable horsepower of the car and by this is meant the horsepower determined by the use of a definite formula dealing with the number of cylinders and the bore of the cylinders, a standard rate being determined upon for all pleasure cars not over 16 horsepower, excepting electric vehicles on which the rates are uniform, and from the definite rate agreed upon for cars not exceeding 16 horsepower there is a gradual increase in the premium rate up to and including 60 horsepower and on cars with higher horsepower the rates are uniform, no increase in rates being made.

The premium rates referred to cover only one interest named as assured, an additional premium being charged for any additional interests named in the policy as assured. It will be understood that the policy will protect the named assured without regard to the identity of the person operating the car at the time of an accident, excepting only that accidents caused while the car is being operated by any person under 16 years of age are not covered.

If the assured owns and wishes to cover more cars than the number of chauffeurs or operators named in the policy, as, for instance, owning two cars and having one chauffeur, the first car being that of higher horsepower may be rated according to the manual and the second car

being that of lower horsepower may be rated in the schedule at one-half of the manual rate, attaching to the policy an endorsement providing that neither of the cars shall be operated by anyone but the named chauffeur or by the owner when accompanied by such chauffeur.

If a policy is issued to cover in the name of a co-partnership or corporation a so-called pleasure car for business use of the co-partnership or corporation, any extension of the coverage to provide pleasure use by any individuals must be effected by naming the individuals as additional assured and adding proper premium charge for such additional interests upon the theory that a co-partnership or a corporation cannot enjoy the pleasure use of an automobile so that any pleasure use of an automobile belonging to a co-partnership or corporation must be in the interests of individuals but, of course, are additional interests in the sense in which this term is used in connection with liability insurance policies. The hazard involved in the use of livery vehicles is considered to be very much greater than that involved in the use of private vehicles and the premium charge is considerably higher. The premium rate for property damage is 25 per cent of the charge for personal injury coverage, with a minimum charge of \$10.

With respect to collision insurance, the premium charge is based upon the value of the car and depends moreover upon whether full coverage is provided or not as manual rules allow a differential for what is known as deductible average—that is to say, the assured is allowed a differential in consideration of a provision in the policy that a certain definite sum named therein shall be deducted from each claim and insurance granted shall be for loss or damage in excess of that amount only.

Policies issued upon commercial vehicles vary as to premium according to the character of the business in

which they are employed and also depend upon the territory in which they are used.

It should be noted that territorial differential is also employed with respect to the premium rates charged for pleasure vehicles in the operation of which the highest premium charges are made in the larger cities and the lowest premium charges in the rural districts of the country.

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CHAPTER XLV
PREMIUM RATES

BY FRANK E. LAW

Problem

THE problem of determining liability premium rates consists in ascertaining (1) the loss cost per unit of exposure, and (2) the loading on the loss cost requisite to pay expenses, contingencies, and profits. The measure of the exposure varies. In employers' liability insurance, the measure generally chosen is the wage expenditure (pay-roll), but tons of material moved (as in mining and quarrying), pounds of explosives set off (as in quarrying and tunneling), and pounds of steel made (as in steel-making) have been used; in public liability insurance, the measure generally chosen is again the wage expenditure, but traffic receipts (as on railroads and ferries), the gross earnings (as in electric-light and power plants), and the number of siphons distributed (as in mineral-water factories) have been used; in teams' insurance, the measure generally chosen is the number of teams (ascertained by dividing the total pay-roll by the average wages per driver), but the number of horses employed has been used; in general liability insurance, the measure generally chosen is the floor area and street frontage, but the number of seats (as in theatres) and the gross receipts (as in moving-picture shows, agricultural and horticultural shows, etc.) have been used; and in elevator insurance, the measure generally chosen is the number of elevators. Whatever measure is chosen, it should be as closely proportional as possible to the quantity of hazard covered by the insurance. An advantage is gained by adhering to one measure of exposure throughout the

entire period of writing insurance, for it is then possible to compare loss costs per unit of the given exposure in periods of time of different dates. This advantage is lost if different measures of exposure are employed at different times.

Difficulties

The difficulties of determining liability premium rates are very great. The hazard insured against, namely, the loss from liability imposed by law for injuries or death caused by accident, is continually changing and all the while becoming greater by reason of changes in the laws holding employers and others to greater responsibility, by court decisions effecting the same result, and by the increasing disposition of juries to find for the injured wherever possible. In most lines of insurance—life, accident, health, fire, etc.—the conditions are constantly growing better, so that business written on the basis of past experience will show a saving on losses, but just the reverse is true in liability insurance, the conditions so far as the insurance companies are concerned are constantly growing worse, so that business cannot be written absolutely on the basis of past experience if a heavy excess of losses and expenses over premiums is to be avoided.

While changes in the law, in the decisions, and in the attitude of the community, courts, and juries toward the question of responsibility for accidents, have been going on all the time, they have been going on at a relatively slow rate until recently, but now they are occurring at an accelerating rate. The appropriate simile is the likening of the changes to an avalanche which, moving slowly at first, gradually attains headway, and at length acquires such momentum that it sweeps everything before it. The first changes were timid and halting and consisted in a change here and a change there with

respect to the doctrine of fellow servant, or assumption of risk, or contributory negligence, but now all these defenses have been swept away in several states, thereby greatly increasing the liability of employers for damages. In addition, workmen's compensation acts have been passed in several states which are presented to employers and employees as an alternative to the employers' liability law. In the presence of these coexisting workmen's compensation acts which compel the payment of compensation to injured employees by employers even when not at fault, there is a tendency for courts and juries when deciding cases under the employers' liability law to minimize the question of negligence and in increasing measure to hold the employer liable when he is not at fault.

It was difficult to determine liability rates when the changes were proceeding at a slow rate, but the difficulties have multiplied a thousandfold since the rate has become swift.

To the uninitiated it may seem that in the situation confronting liability underwriters, past experience is valueless and that the best method of fixing rates is to depend on the expert judgment of those who have had years of experience in underwriting the business. Experienced underwriters, however, are the first to assert the unsoundness of this view and to insist on the value of past experience in informing and correcting the judgment. The past experience shows the loss costs under certain known conditions and also the changes in the loss costs due to known changes in the conditions, especially when comparisons of the loss costs in the several states are made, and thus affords a means of formulating valuable conclusions respecting the rates required to meet given conditions.

It is not alone the changes in the conditions that make the determination of liability rates difficult, but also the

fact that the losses are deferred. On the average, eight years are required—counting the year in which the policies were written as the first year—to liquidate the claims growing out of accidents occurring under policies written in any given year. Of course there are some scattering losses that are not paid for several years after the expiration of eight years, but these are practically negligible in determining rates. The following illustration, showing the percentages of the premiums paid out in the successive years for losses and expenses of investigating and adjusting claims, is typical:

	Payments in the several years.	Accumulated payments at ends of the several years.
1st year.....	.111	.111
2nd ".....	.202	.313
3rd ".....	.094	.407
4th ".....	.070	.477
5th ".....	.051	.528
6th ".....	.028	.554
7th ".....	.014	.568
8th ".....	.006	.574

The losses being deferred thus, makes it impossible to get an early measure of the effect of changes in the conditions. The experience is not fully completed for eight years and until it is completed, the results cannot be surely known. It is possible to get an idea what the ultimate losses will be by assuming that the relation between the present loss ratio, L , at the end of a given year, say the third, L_3 , and the ultimate loss ratio, L_u , will be the same as the relation shown by past experience, $.574 \div .407 = 1.41$, and using this quotient as the multiplier of the present loss ratio, $L_u = L_3 \times 1.41$, but the assumption involved that the rate of settling losses is the same as in the past is not wholly satisfactory, and may or may not be true.

Another difficulty arises out of the narrowness of the

available experience. For instance, in the employers' liability line some 950 or so classifications are listed in the manual, and business is written in some fifty states and territories. Rates for about 47,500 classifications have, therefore, to be determined and stated. Again, business is written at varying individual and total limits, and the correct relative rates for these must be ascertained. It is not to be supposed that the data available for the determination of rates consist of so many different items. In some states not over three or four of the 950 classifications are written. In all, out of the possible 47,500 classifications that may be written, there is experience on about 3,000 only.

In spite of all these things, it remains a fact that by a systematic study of past and present experience, a very practical and useful guide in underwriting may be deduced. But it will be a long while before liability rates can be put on the safe and scientific basis that life rates are on, if indeed this is ever accomplished. It is more likely that employers' liability laws will be superseded by workmen's compensation laws before this day can arrive.

Co-operation of Companies

The difficulties of determining right liability rates naturally lead companies to co-operate with each other in making rate compilations and rate investigations. By combining the experience of several companies, a broader exposure is obtained. Moreover, a number of underwriters working together in determining rates will check each other's conclusions and are more likely to reach right results than individual underwriters working alone. Co-operation among the companies in determining rates, therefore, becomes a necessity in order to determine right rates and to avoid discrimination between the various classifications. Such discrimination must inevitably occur

when the experience is narrow, and will compel some policyholders to pay too much for their insurance while others pay too little.

The advantages of co-operation were recognized early by the companies, and the business was scarcely well under way before an association of the companies known as the Liability Conference was formed in 1896. This continued in existence until 1911, when it was merged with the Workmen's Compensation Service and Information Bureau, which had been established in 1910. All of the important companies which are recognized as having a close and accurate knowledge of the business are members of this bureau.

The Liability Conference utilized the combined experience of its members in determining rates and the Workmen's Compensation Bureau is doing so also.

Method

The method of deducing liability rates outlined here was devised by the writer in 1900. It was adopted by the Liability Conference and was used in determining the rates in the conference manual of May, 1901, the conference manual of December, 1904, and the conference manual which it was expected would be published in 1910, but was not on account of the work having been taken up by the Workmen's Compensation Service and Information Bureau.

The simplest method of determining rates is to follow the indications of each classification in each state, examining each of the state classifications separately. This, however, is unsatisfactory, because the state experience in most classifications is too narrow to "give an average" and is consequently misleading.

The experience for the country at large is accordingly adopted as the basis, and the differences between states ignored for the time being. In this way the broadest pos-

sible basis is secured. The procedure consists of two separate and distinct steps: first, the determination of rates or list prices to be printed in the manual; and second, determination of the differentials or discounts off of the list prices for each of the several states.

Further Broadening of Basis

In order to broaden the basis still further, the classifications which are analogous or similar in hazard are grouped, and the average pure premium loss, that is, the loss cost per unit of exposure, is ascertained for each group. The rules observed in forming the groups are as follows:

(a) Similar or analogous hazards are grouped together.

(b) Hazards of different character, but carried on in the same works, so that employees are likely to be shifted from one occupation to another, are grouped together.

(c) Hazards in which "jockeying the rate" is likely to occur, that is, where a hazard carrying a given rate is likely to be written by an agent under a similar classification at a lower rate, are grouped together.

Selected Values of Pure Premium Losses

The experience of all the companies having been combined in groups of classifications of similar hazard, both for the country at large and for the states separately, a table is then prepared, called the "distribution table," showing the pay-roll and average pure premium loss for each group, in the country at large and in each of the states, for business written at first limits of \$1,500 and \$5,000 separately. A table of counter-differentials, that is, a table of loss costs in the several states relatively to the country at large stated as 1, is also prepared from the last previous tabulation of experience, giving the position of the states in respect to relative loss costs as

accurately as possible. The counter-differentials of some states are of course less than 1 and of other states greater than 1, indicating loss costs respectively less and greater than the country at large. All these data are then carefully studied by a committee of underwriters, the experience of each state being reduced to the basis of the country at large by means of the counter-differentials (this is done by dividing the state pure premium loss by the state counter-differential), and the pure premium losses of allied groups being carefully compared. As a result of these studies and comparisons, the selected value of pure premium loss for \$5,000 first limit and \$10,000 second limit for each group is set down. This pure premium loss is the loss cost per unit of exposure that would be sustained by a company, writing business at \$5,000 first limit and \$10,000 second limit, having sufficient volume to get a true average from experience over the country at large if the physical and legal hazards were the same in every state and territory.

Experience Reported by Limits

Experience on policies written at first or individual limits of “\$2,500 and under” is reported in one group (practically all of these will have been written at \$1,500 limit) and experience on policies written at first or individual limits of “over \$2,500 and under \$7,500” is reported in a separate group (practically all of these will have been written at \$5,000 limit), while experience on policies written at first or individual limits of “\$7,500 and over” will be reported in as many different groups as there are different first or individual limits. No separation of experience with respect to the second or total limit is made. For the investigations regarding the second limit, see paragraph “Disaster: Influence of Second Limit”, *infra*.

Division of Losses

When the question of expense is a factor or there is necessity for haste, the losses are reported under the headings simply, "Paid Losses," "Outstanding Losses," and "Total Losses." But whenever it is possible to do so, it is better to divide the losses under the following headings: "Medical," "Compensation to Injured," "Allocated Claim Expenses," "Unallocated Claim Expenses," "Outstanding Losses," and "Total Losses." If some policies are written to cover "First Aid" only, while other policies grant "Full Medical Attention," a further division under these headings is necessary. "Compensation to Injured" comprises the amounts paid in settlement of claims. "Allocated Claim Expenses" are those claim expenses ordinarily entered in a company's loss cash books and comprise fees to attorneys for defending cases, court costs, fees paid for expert testimony, etc. "Unallocated Claim Expenses" are those claim department expenses that cannot readily be charged to individual claims, such as salaries of claim examiners, adjusters, and attorneys, rent, stationery, etc., and are consequently not entered in a company's loss cash books, as a rule, but are entered in a separate account. These unallocated claim expenses are known then as the amounts expended in given years on account of losses during the current year and seven preceding years, it requiring, as has already been pointed out, eight years to liquidate the claims arising under policies written in any given year. These unallocated claim expenses are then distributed by a system of percentages deduced from an examination of the work of the claim department and ascertainment of the proportional amounts of work done in the current year on claims of the current year and preceding years. The percentages adopted to effect the distribution in the company with which the writer is connected are as follows: Let A represent the unallocated

claim expenses of any given year. Then the amount chargeable to the current year is .325 A, to the preceding year, .375 A, to the second year preceding, .10 A, to the third year preceding, .10 A, to the fourth year preceding, .05 A, to the fifth year preceding, .03 A, to the sixth year preceding, .015 A, and to the seventh year preceding, .005 A. These are the percentages for "level" volume, that is, equal premium incomes in the successive years. When the volume is not level, the percentages are varied in a suitable manner. In the liability loss reserve laws passed in the year 1911, in New York, Massachusetts, Connecticut, and other states, the view is taken that the unallocated claim expenses may fairly be distributed over five years instead of eight. The practical difference between a distribution over five years and eight is not great, for it will be noted that but 5 per cent. is chargeable to the fifth, sixth, and seventh years preceding the current year. "Outstanding Losses" will be the sum of the company's estimates of the cost of disposing of pending claims. This sum will always be less than the company's full reserve for outstanding losses, because certain accidents, which have been reported, but which appear to possess no element of liability, will rise into claims.

Number of Accidents

In reporting experience it is well to have the number of accidents which have occurred set down for each classification in each state. The information is useful in a variety of ways,—dealing with the question of first aid and subsequent medical attention, in dealing with the question of the costs of making investigations of accidents in the various classifications in the several states, in dealing with the question whether the physical hazards are increasing or decreasing, and in estimating in some degree the relative extent to which various classifications

are affected by a change of the law by reason of the relative frequency or infrequency of accidents.

Trade Hazard as Distinguished From Common Hazard

Sometimes the question is raised whether it is necessary to differentiate between the trade hazard, that is, the hazard peculiar to the given trade, and the remaining hazard common to all industrial operations. Caving in of a bank, in the case of contractors, an accident caused by a loom or a carding machine in the case of textile manufacturers or a flesher in the case of morocco dressers, would come under the trade hazard, while a boiler explosion, a fly-wheel disruption, or an elevator accident, would come under the common hazard. Separation of losses due to the trade hazard from those due to the common hazard has never been made so far in any tabulation of experience owing to the expense. It is urged by those who insist that the differentiation should be made that an injustice is often done to an individual classification or group of classifications when a heavy loss, due to the common hazard, such as a boiler explosion, is allowed to fall wholly on the one classification or group instead of being distributed over all the classifications. While it is true that information of interest would be obtained and rates would be made with somewhat greater exactness if the costs of the trade hazard and of the common hazard were determined separately, it is doubtful whether it is worth while to go to the expense at present when there are other factors of greater importance of which it is impossible to get an exact measure.

Disaster: Influence of Second Limit

A disaster may be defined, for experience purposes, as an accident, causing injuries to several persons and involving the payment of an amount in excess of the first limit of the policy. In the experience tabulations made thus far, no separate examination of disasters has been

made owing to the expense of the examination. It is a question of course whether a disaster should be charged wholly to the classification in which it occurs, or should be distributed over the entire business. Disasters are not numerous relatively, so that they can be dealt with effectively by having the companies report a list of the disasters in their experience, with a full statement of the details, and by considering then each disaster separately, in setting down the selected values of pure premium losses. Unless the experience in the group of classifications containing a disaster is very broad—broad enough to give a true average—part of the losses due to the disaster should be distributed over the entire experience, and whole disaster losses not be charged to the group of classifications.

From a study also of these disasters, information may be gained with reference to the increase in rate necessary for higher second limits. The experience relative to disasters is merely indicative, however, and is not an absolutely sure guide, owing to the narrowness of the disaster experience. The influence of the first or individual limit preponderates greatly over the influence of the second or total limit.

Corrections and Loadings

The selected values of pure premium losses for \$5,000 first limit and \$10,000 second limit having been set down, the determination of rates for the country at large follows. This consists of three separate and distinct steps:

First, correction of pure premium losses to the values corresponding to completed experience.

Second, correction of pure premium losses to values on the basis of losses that will be sustained during the period in which the rate-book will be used, that is, correction for “business growing worse.”

Third, addition of loading for expenses.

Correction to Completed Experience

If only the years on which all claims had been liquidated and experience completed were included in the tabulations, the experience would be narrowed and would lack the part which it is most desirable to use—the recent experience. The omission of incomplete experience would leave out the experience on business of the last eight years, for, as has been pointed out, it requires eight years to liquidate the claims under policies written in any given year. The omission of recent experience would result in lack of measure of the new conditions developing, for, as has been pointed out, the employer is all the while being held to a stricter accountability for injuries suffered by his employees.

The use of recent experience, incomplete as it is, is made possible by including in the experience the estimates of the costs of settling specific outstanding claims and suits and applying a correction for the deficiency between these estimates and the ultimate cost of all outstanding losses,—those cases which have developed into claims or suits and those cases which have not yet developed into claims or suits. The specific estimates always fall short of full reserves necessary for two reasons: first, because it is never possible to estimate the costs with absolute accuracy, and second, because claims will be made and suits will be brought that have not yet been developed. For instance, the company with which the writer is connected carried a reserve for outstanding liability losses at December 31, 1910, under the New York law of 1905, of \$1,230,753.18, while the total of the specific estimates of the cost of the claims and suits in sight was \$948,525 only, the former thus being \$282,228.18 greater than the latter. As is well known, the New York law of 1905 does not provide for adequate reserves as a general rule and has consequently been superseded by a new law passed in 1911.

In making the correction to reduce the experience to completed condition, it is necessary, therefore, first, to ascertain the deficiency in the outstanding loss estimates, and second, to distribute this deficiency.

The ascertainment of the deficiency may be effected in either of two ways,—by noting the difference between the amount of the specific estimates for outstanding losses and the reserve for the corresponding years required by the new New York law of 1911, or by the method of correction coefficients. In brief, the method of correction coefficients consists: first, in noting the average ultimate loss ratio of a number of years for which completed experience is available; second, in noting the average loss ratio, paid and outstanding, at the end of the first year (that is, the year in which the policies were written), the average loss ratio, paid and outstanding, at the end of the second year; the average loss ratio, paid and outstanding, at the end of the third year, at the end of the fourth year, and so on, determining all of these average loss ratios, however, by taking the sum of the premiums and the sum of the losses of the years under consideration, so that each year shall exercise an influence proportionate to its volume and no more; third, determining the correction coefficients by dividing the loss ratio at the end of the first year into the ultimate loss ratio, the loss ratio at the end of the second year into the ultimate loss ratio, and so on, and thus arriving at a set of factors expressing the relation between the loss ratios at any stated time during the period when settlements are being made and the ultimate loss ratio; fourth, using these correction coefficients to calculate the ultimate losses of the years of business embraced in the experience under consideration by multiplying the present paid and outstanding losses based on specific estimates by the appropriate correction coefficient corresponding to the given stage reached in the history of the year's business being dealt with, whether it be at

the end of the second year, the third year, or fourth year, or other stage; and fifth, ascertaining the one correction coefficient applicable to the total of the years embraced in the experience by dividing the sum of the present losses, paid and outstanding, into the sum of the ultimate losses as calculated by applying the individual correction coefficients. It is best to use tabulations of experience in which the correction or loading necessary on account of the experience being incomplete shall be as small as possible. Generally it is possible to keep it down to 10 per cent. or less, that is, the correction coefficient for the group of years chosen does not exceed 1.1. Great care and good judgment must be exercised in using this method of correction coefficients or erroneous results will be obtained. The method cannot be applied rigidly. Due investigation must be made to determine whether there has been any variation in the rate of settling losses, that is, whether quicker settlements or slower settlements are being made, and due allowance must be made for any changes discovered. The method involves a number of assumptions,—constant composition of the business in successive years in respect to classifications and distribution by states, unvarying rates from year to year (that is, equal premium charges for equal hazards), and unchanging rates of settlement from year to year.

Having by one or other of these methods determined the amount of the deficiency in the specific loss estimates, this amount is distributed generally by multiplying the pure premium losses by the one correction coefficient expressing the relation between the amount of the specific loss estimates and the amount of the ultimate losses. Of course this results in loading some pure premium losses too much and others too little, but the plan is as good as can be devised considering all the circumstances.

Correction for "Business Growing Worse"

In studying any subject, it is important to consider it in its historical aspect. This is particularly important in insurance where the rates are based in part at least on past experience. A careful investigation is, therefore, required to determine whether conditions are changing, and if so, at what rate.

It being granted that the business is "growing worse," it is evident that the average pure premium loss for the group of years serving as the basis cannot properly be used without correction in fixing the rates to be charged now or in the future. The rates fixed from such experience would be too low.

It has been found that in a large volume of business, the distribution by classifications and states is sufficiently constant to make it possible to use the pure premium losses (corrected to ultimate values) of the successive years to measure the extent to which business is "growing worse." Comparisons of the pure premium losses for the country at large in the successive years are made, both for \$1,500 limit and \$5,000 limit, and for the several schedules in which the classifications are grouped. Care of course must be exercised to eliminate any error due to deficient or incorrect pay-rolls. Co-ordinate geometry may be utilized to predict the probable cost of future business by a graphical method, laying off on a base-line equal distances to represent years, erecting ordinates to represent the pure premium losses of the several years, drawing a smooth curve limiting the ends of the ordinates, extending the curve in its general direction, and measuring the lengths of the ordinates for the future years. These predicted pure premium losses may then be compared with the average pure premium loss for the period of years of which the experience is being used, and a factor for "business growing worse" established. This factor can then be used to correct the pure premium

losses. This method is known as the method of pure premium losses.

Another method, known as the method of loss ratios, may be used. In this method, the experience of the respective states is examined separately, one state at a time. The country-at-large selected values of pure premium losses are loaded to reduce to completed experience, to provide for business growing worse, and for expense loading, and what may be called the normal or natural rates ascertained. These are applied to the pay-rolls of the successive years' business of the state under consideration, each year separately, and the premium incomes ascertained. These premium incomes are then divided into the losses of the corresponding years and the loss ratios ascertained. A base-line is laid off with equal distances to represent years, ordinates erected proportional in length to these normal loss ratios, the actual and probable curves drawn, and predictions made as before in the case of the pure premium losses. The selected values of pure premium losses, it will be evident, can be used just as well as the rates in making this investigation, and comparison made of the quotients obtained by dividing the calculated losses based on the selected values of pure premium losses used as the standard with the actual losses.

The extreme importance of thus viewing the experience in its historical aspect cannot be overestimated.

If a large number of companies are contributing their experience and thus greatly broadening the experience used as a basis, it is possible to omit the experience of the earlier years and avoid the errors due to its being obtained under quite different conditions from the recent experience. The most valuable experience for use as the basis in rate-making is the recent experience, provided enough of it may be obtained to afford a true average and

provided it is not too recent to introduce errors due to its being incomplete.

Loading for Expenses

The items that enter into the loading for expenses are generally known as a percentage of the premiums and are as follows:

c = Commissions to agents.

b = Business-getting expense in addition to commissions to agents.

u = Underwriting expense, that is, expense of selecting and caring for business, including the cost of underwriting proper, booking, inspecting, auditing pay-rolls, statistics, etc.

g = General expenses, such as management, taxes, license fees, etc.

d = Underwriting profit.

i = Investment profit.

Denote the other factors involved in the rate calculations by the following symbols:

x = Indicated rate.

p = Pure premium loss for limits of \$5,000 and \$10,000, loaded for completed experience and for "business growing worse." It will be remembered that p includes all expenses of investigating and adjusting claims, both the allocated claim expenses and the unallocated claim expenses, the latter having been added by a system of percentages (see paragraph "Division of Losses", *ante*).

The assumption is generally made that whatever the rate may be, the same percentage of the premium is consumed by the expenses. On this assumption, the formula for the derivation of the rate from the pure premium loss, proper provision being made for the expense loading, is

$$x = cx + bx + ux + gx + dx - ix + p$$

$$\text{Whence } x = \frac{p}{1 - (c + b + u + g + d - i)}$$

Rates for the Country at Large

From the selected values of pure premium losses for \$5,000 limit, corrected to completed experience, corrected for "business growing worse," and loaded for expenses, there results a table of rates for the country at large. These are the rates at which business might be written everywhere if the physical and legal hazards were the same everywhere. But the physical and legal hazards are not the same everywhere. Therefore the rates must be higher in some states than the mean rates, and must be lower in other states than the mean rates; in short, differentials must be applied. These rates for the country at large are the mean rates.

Counter-Differentials

It has been noted that there are differences between the states in respect to physical and legal hazards. By physical hazard is meant exposure to danger in doing work, in methods of doing work, in kind of machinery used, in precautions taken against the occurrence of accidents, and in character and intelligence of employees. By legal hazard is meant the laws and judicial decisions and the attitude of the community, courts, and juries toward the question of the relations between master and man.

For the ascertainment of the values of the differentials necessary to be applied in the several states by reason of the differences in physical and legal hazard, and the differences in the costs of liability settlements consequent thereon, it seems at first sight as if a comparison of average pure premium losses would suffice. But this overlooks the fact that a preponderance of business in a hazardous schedule like contractors, or in a non-hazardous schedule like textile, may increase or decrease the average pure premium loss, and the position of the state would thus be determined by the distribution of the business in respect to schedules instead of by the inherent quality of the

business. This difficulty can be gotten over only by a method that eliminates the influence of distribution of business in respect to schedules. This elimination may be accomplished by the method of counter-differentials, which effects the elimination automatically by the use of rates proportional to the various hazards.

The method of counter-differentials consists in ascertaining the values of factors expressing how much better or how much worse the business runs in each state than it does in the country at large; in other words, the relative cost of liability settlements in the several states. The loss cost for the country at large, that is, for the United States as a whole, is taken as the basis and designated as 1. The costs in the several states are then stated relatively to this loss cost of 1 for the country at large.

Using the rates for the country at large—the mean rates—and applying these to the pay-rolls in the several groups of classifications in the experience in each state, what may be called the normal or natural premium income is calculated for each state, and not only for the state as a whole, but also for each individual schedule in the state. Schedules, it will be remembered, are nothing more than groups of classifications of kindred physical hazard. Using these calculated premium incomes, the corresponding normal loss ratios are ascertained by division of the premium incomes into the losses. If now the calculated normal loss ratio for the country at large is divided into the calculated normal loss ratio for each state, a factor is obtained showing how much better or how much worse the given state is than the country at large. This is done, not only for the business as a whole in each state, but also for the business in each schedule in each state.

These calculations having been effected, there results for each state a set of counter-differentials, equal in number to the number of schedules plus one, the one additional being that for all schedules combined, the business

of the state as a whole. It will be found ordinarily that these counter-differentials differ in value. Examining the counter-differentials further, it will be found that wherever the volume of business is large enough to give a fair average, there is equality in the values of the counter-differentials. For instance, the volume of business is, as a rule, large in the contractors', metal, and miscellaneous schedules, and the counter-differentials of these schedules are invariably identical in value within any given state, whatever the state selected. This fact, it seems to the writer, answers the question whether one or several differentials need be provided for a state, that is, varying differentials for the several schedules or the same differential for all schedules, for it leads necessarily to the conclusion that the differences between states by reason of the physical and legal hazards are exactly the same in all schedules and that but one differential is required, or rather that the identical differential should be used for all schedules.

After thus determining the counter-differentials from the experience, corrections will have to be made in the table by reason of changes in the law and of decisions coming after the period covered by the experience. It is necessary to make comparative studies of the laws and decisions in the several states. Necessarily judgment and knowledge of the business obtained by long years of work in it must play a large part here.

Having now a table of rates for the country at large and a table of counter-differentials, the rate for a given classification in a given state may be determined by multiplying the rate for the country at large for the given classification by the counter-differential of the state. For instance, suppose the rate for masons for the country at large is \$3.85, and it is desired to know the rate for Illinois. The counter-differential of Illinois is, say, 1.4. The rate for Illinois is then $\$3.85 \times 1.4 = \5.39 .

Manual Rates and Differentials

From the table of counter-differentials, the differentials may be determined. It is best generally that the manual rates shall be stated at the figures for rates in the tariff states, the states where no discounts are allowed. Say the counter-differential of the state showing the highest relative loss cost is 2. The manual rates would accordingly be made twice the rates for the country at large. The differentials would then be ascertained by finding the counter-differentials of the several states relatively to the tariff states and subtracting the result from 1. Thus the differential of Illinois, its counter-differential relatively to the country at large being 1.4, would be $1 - (1.4 \div 2) = 1 - .7 = .3$, or 30 per cent.

Rates for Various Limits

Comprehensive data on which to determine rates for various first or individual and second or total limits are lacking. A careful study and comparison of the available data is needed to reach reliable conclusions.

Comments on Method

It will be evident from a perusal of the foregoing that in deducing liability premium rates, a slavish adherence to the rules is not possible. An elastic treatment of the data is necessary, a treatment in which judgment and long experience in the business play a principal part. The conditions against which the companies insure are constantly shifting and fluctuating so that the obtaining of an absolute mathematical measure of the costs is in the highest degree difficult.

Other Lines

In determining the rates for public liability, contingent liability, vessel, teams', general liability, elevator, physicians' liability, and druggists' liability lines, methods

identical so far as possible with the foregoing described method are used, varying it only in so far as it is necessary because of differences in the characters of the lines or differences in the conditions.

Special Rates

The manual rates are suited to the average risk. But all risks do not conform to the average. Differences exist in risks and it is right that some risks should pay a higher rate and others a lower rate, even though they all fall under the identical manual classification. The manual classifications do not describe risks fully. They stop after naming the trade or business. Character of management, spacing of machinery, lighting, safeguards provided, speed of work, hours of labor, intermissions for rest, character and intelligence of employees, relations between employer and employees, whether of good-will or ill-will, care taken of employees in case of injury, proximity of negligence attorneys to incite to claim-making—all are important factors, sometimes more important than the nature of the business.

Having, therefore, had sufficient experience on a risk to give a true average and to indicate its true character, it is right to rate a risk up or down and make it contribute its fair quota to the common fund, a quota proportional to the hazard of the operations of the risk relatively to the mean hazard.

A valuable adjunct to the experience in rating risks up or down is the inspection of the risk by a competent, experienced inspector.

Workmen's Compensation Rates

The Liability Conference recognized several years ago that workmen's compensation for accidents was coming in this country and began the compilation of experience on which to base rates for workmen's compensation in-

surance. The companies had long been transacting a line of insurance known as workmen's collective insurance which differed no whit from workmen's compensation provided by law except that smaller benefits were paid. Workmen's compensation insurance and workmen's collective insurance are nothing but forms of personal accident insurance covering a number of workmen collectively. Accordingly the Liability Conference obtained from the companies composing its membership data of deaths, permanent disabilities (their nature and the age at which they were contracted), and temporary disabilities (their nature and the number of weeks and days they kept the injured from work), occurring under the workmen's collective policies they had written, together with the wage exposure under these policies. These data enabled the calculation of the costs of benefits under the various workmen's compensation acts enacted in the several states, and consequently the rates necessary to be charged for workmen's compensation insurance. These data by the merger of the Liability Conference with the Workmen's Compensation Service and Information Bureau have become available to the bureau also. Further data useful in determining workmen's compensation rates are supplied by the data of accidents under employers' liability policies and by the experience of the companies under personal accident policies. The companies thus have a sure guide for their underwriting of workmen's compensation insurance. The only doubt that may exist is whether they will get their rates pitched high enough. Their experience was obtained under workmen's collective, employers' liability, and personal accident policies where they exercised some measure of control over the payment of losses. This control is largely diminished under workmen's compensation established by law, and fraud, malingering, and simulation are likely to increase the losses heavily.

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CHAPTER XLVI
SETTLEMENT OF LOSSES

BY WALTER L. CLARK

THE adjustment of claims under this class of insurance assumes unusual importance on account of the enormous number of accidents reported and the latent but indefinite liability under each claim. To comprehend the theory underlying the adjustment of liability claims, a general understanding of the scope of the policy is necessary, and for this purpose we must digress for a moment.

This insurance is written to protect employers from loss on account of their legal liability for personal injuries sustained by their employees, or other persons. It differs fundamentally from life, accident, or fire insurance in that the loss arises out of injury to persons who are not parties to the contract. The claimant has no rights against the insurance company, but makes demand and prosecutes suit directly against the insured, who is defended and indemnified by the company. The protection afforded the insured is of a definite kind; not against moral responsibility which the insured may feel toward the claimant, but for the tangible and fixed liability imposed upon him by law; that is, what he can be compelled to pay by resort to litigation. It is apparent, therefore, that an insured has no right to enlarge his responsibility by voluntarily assuming obligations not imposed upon him by law or authorized by his policy, without the assent of the company, unless he intends to fulfill such obligations himself.

The policy usually obligates the insurer to pay the cost of the first medical or surgical treatment rendered imperative by the injury. This additional coverage tides

the insured over a period of excitement immediately following the occurrence and gives him an opportunity for calm reflection, during which he can decide whether he feels sufficient moral responsibility or humanity, if the term may be so used, to assume any further expense for the medical and hospital treatment. He is not legally liable for such treatment and if he so desires may refuse it, taking refuge under his policy protection if claim be made. Occasionally an insured may desire to shift the burden of this moral or humane responsibility to the company and can accomplish it by purchasing a policy covering full medical attention.

While liability policies protect the insured from loss resulting from his legal responsibility, it would manifestly be very onerous on both parties to such a contract if they were compelled to wait until the insured's liability were fixed and determined by the final judgment of a court. Cases can ordinarily be settled in their incipiency for a comparatively small proportion of what would be obtained by trial, thus avoiding additional costs and expenses. The advantage to the insured of settlements is manifest, as verdicts may exceed the limits of his policy, in which event the excess would fall upon him. For these reasons, therefore, it seemed wise and equitable to embody in all liability policies a clause giving the insurer the right to make adjustments of claims, thereby enabling it to protect both its insured and itself.

The duties of the insured under such a policy may be epitomized in the words "prompt notice." He must notify the insurance company promptly of all accidents, claims and suits. The company's responsibility is embodied in the word "protection," but in order to protect the insured it must investigate, compromise, defend and reimburse. Evidently, the right to make adjustments is of no avail unless the insurer is advised of an impending claim requiring settlement. Prompt notice, therefore,

gives the insurer the opportunity of investigating the case to ascertain whether the insured is legally liable, and settling it should such liability be determined. Notice of the institution of suit is also important, as the defense must be placed in the hands of competent attorneys promptly so that pleadings may be filed and the case prepared for trial. The object of all these clauses is to give the insurer all the information possessed by the insured and not harass him with technicalities or surround the policy with conditions enabling the insurer to escape liability. Reference is made at some length to these provisions as they form the basic law or constitution of the claim department of a liability insurance company. With this preliminary explanation, the general subject of claim adjusting will be now discussed.

Notice of an accident is usually forwarded to the office of the general agent, local adjuster, or insurer upon printed blanks provided for the purpose, so designed as to bring out briefly the facts surrounding the occurrence and the names of the witnesses by which these facts may be verified. This notice enables the adjuster, or claim department, to determine whether the accident is one for which the insured has purchased protection and by sizing up the claim to determine roughly how it should be treated. The reports are especially important in the handling of accidents to employees, as many of them show definitely on their face that the insured cannot be held legally responsible for the accidents, or that the injuries are so trivial that no claim is to be anticipated. Such cases ordinarily demand no further attention than inquiry at the proper time to ascertain whether the injured has returned to work, so that the adjuster may catch up any cases where there may have been unfavorable developments in the injured's condition. The majority of cases, however, cannot be so summarily disposed of for several reasons. The report may not be sufficiently

explicit to determine the question of liability or injury; the injury may not be trivial; or the facts given may point to possible liability. Any one of these reasons is sufficient to require further inquiry or investigation by the insurer's representative, who may be either an attorney or general investigator skilled in this line of work.

Too much stress cannot be laid upon the absolute necessity for promptness in making investigations and great care is required of the home office assistants in following up local investigators, especially where such investigations are made by local attorneys, in order that no time may be lost in authorizing necessary adjustments. While the ultimate end of all claim department work is the adjustment of claims, yet the actual adjustment is a comparatively simple matter. The brain tissue of the adjuster is used up in the preliminary work of ascertaining the need for settlement and the value of the case. Just as a reporter must get the news quickly and accurately to "scoop" the rival newspaper, so must the investigator obtain the facts to defeat the ambulance chaser or attorney always on the lookout for personal injury cases; indeed, he must be even more expeditious, as facts must be obtained in time for a determination by his superior of the value of the case and necessity for final adjustment. Everything must be done before the wily attorney persuades the claimant to sue by promises of great wealth, which form an alluring bait to the usual claimant.

A thorough working knowledge of the general forms of policies is a necessary part of the equipment of every investigator and employee of a claim department, and if investigations are made by attorneys, care must be taken by the home office correspondents in charge of the case to fully instruct them concerning the points to be covered, as few attorneys are familiar with the scope of liability policies. This instruction must also cover an explanation of that portion of the policy applicable only to the partic-

ular insured, i. e., the location and character of the work covered.

Assuming that facts have been developed showing that the particular accident is covered by the policy, it then becomes the investigator's duty to ascertain whether the insured is liable for the injury, or likely to be held responsible through mistaken or perjured testimony. To comprehend the facts demanded by a proper preliminary investigation, it is necessary to be somewhat familiar with the principles of negligence law to be found in reported cases, text books and statutes. The difficulty here encountered is in the application of the principles learned. The investigator is required to foretell the point of attack and to defend it in advance by statements, affidavits and material evidence. This demands a wealth of imagination quickened by a fund of experience derived from cases involving similar facts. Some knowledge of the general rules of evidence is always helpful in getting the testimony in such shape as to be available to the trial counsel, to whom facts are of little value unless susceptible of competent proof. While this pertains more especially to the work of the investigator, or field man, still it is equally important to the home office claim man under whose superintendence falls the work of local attorneys more or less skillful, diligent and experienced in the handling of liability claims and litigation. Unless the home office correspondent can act as adviser and consultant to the local attorney, imparting to him wisdom and experience gathered from many similar cases, the insurer is occasionally dependent upon the limited experience of an attorney in general practice, whose work includes the trial of few negligence cases.

The facts surrounding the occurrence may be obtained in various ways, each of which has its merits. They may be gathered by simple interviews with the insured, witnesses, or the injured; but it is usually preferable, and

often necessary to make some statement of fact, especially from the witnesses and the injured. Some-
 times interviews should not be made when the injury is so slight that the claim will not be made. Some-
 times the injured is injured by an over-enthusiastic driver which sometimes causes serious and a little bit
 "easy money." When the injury is serious, a claim of
 suit is always to be expected, and it is not wise to
 depend upon oral statements although the witness may
 be most friendly. Interviews with the insured, adjuster
 or superintendents, unless they are actual witnesses, are
 usually limited to ascertaining how the witnesses are
 treated while disabled, and to ascertaining to know the
 scope of the policy with respect to expense and medical
 attention. It not infrequently occurs that the insured un-
 honestly or dishonestly assumes that the company's liability
 policies cover wages during disability, together with hos-
 pital expenses and medical attention. Occasionally
 investigators meet with an insured who deliberately or
 unconsciously ignores his obligations under the policy,
 and aids or encourages the injured in the prosecution of a
 claim for damages. Instances are not unknown where the
 insured's private counsel has been furnished for this
 purpose, although this, usually done secretly, is difficult
 of detection and hard to prove.

In dealing with the witnesses the investigator must
 depend greatly upon intuition. The method of handling
 them varies with the individual witness and the person-
 ality of the investigator or adjuster. Some witnesses
 respond to courtesy and friendliness, while with others
 a fair statement of the facts can only be obtained by great
 diplomacy. It is advisable to size up the particular wit-
 ness and determine how much weight shall be given his
 testimony, as well as the likelihood of obtaining a truthful
 statement from him upon the witness stand. This
 depends to a great extent upon the character of the man,

and if an employee, upon his loyalty to his employer. The extreme importance of obtaining street addresses and other information by which the witness can be traced need scarcely be mentioned. The difficulty of locating witnesses after the lapse of even a few months renders this necessary. Where the injured or witnesses do not speak English, great care is required in selecting interpreters who are not only competent but thoroughly trustworthy, as they are frequently in close touch with negligence attorneys, serving both sides indifferently, to their own pecuniary advantage.

Information concerning the injured is indispensable to the investigator, adjuster, claim manager and attorney. His character, attitude toward his employer, length of service, disposition to litigate, the neighborhood in which he lives, proximity to shysters or ambulance chasers, physical condition and his family relations all indicate to the experienced claim adjuster whether or not claims will be made, or suit brought, and what sum will probably settle the case. Knowledge concerning the nature of the injury and probable duration of the disability is required, and in addition to this an effort should be made to ascertain the reputation of the hospital to which he is confined and of the surgeon treating him. Experience has shown that especially in large cities some hospitals are peculiarly accessible to lawyers, or their representatives, preference being shown to certain attorneys. The attendance of some doctors is almost invariably followed by claims, usually through the same attorney. This may be a mere coincidence but is of sufficient frequency to be taken into consideration. The good will of an attending physician is, therefore, to be desired and cultivated, as much can be done to control and settle the claim by the assistance of a friendly doctor.

The advisability of obtaining signed statements, or even affidavits of witnesses in serious cases needs but

little argument, as the moral hold which it gives upon the witness and the injured prevents exaggerating the injury and distorting the facts. Such statements serve as a memorandum to refresh the memory of an honest but forgetful witness and should be written as nearly as possible in his own words, preferably by himself. Even if this be impossible, a little tact will enable the investigator to obtain some trivial correction made in the handwriting of the witness which will effectually forestall any claim that the statement was not read over to him. The value of these statements in settlement or trial cannot be overestimated, as the moral effect of an affidavit in the hands of the defense has caused many a witness to tell the truth on the witness stand where he had been called by the plaintiff for testimony of an entirely different character. If it is impossible to obtain either sworn or signed statements, a serious case often warrants the employment of a competent stenographer and a verbatim report of the conversation between the injured or the witness and the investigator.

There is another class of evidence often overlooked by investigators and attorneys which is easily obtained and very valuable because readily understood by the average juror. If the defendant is able to produce in court the contrivance which broke (thus proving the existence of a latent defect for which the owner is not responsible) or a model of the machine upon which the accident occurred, or photograph of the place, it must of necessity have more weight than the testimony of many witnesses. These things can be seen, handled and appreciated, and no allowance need be made for mistake, misrepresentation or forgetfulness. Hence the necessity for carefully preserving all broken parts, obtaining models, photographs, etc., so that they can be offered in evidence at the trial if required. Such parts should be marked at once by witnesses so that they may be identified when offered in

evidence. It is well also to have disinterested witnesses present while the photographs are being taken and to require the photographer to keep a record of the day, hour and exposure. A plan of the place with measurements taken by some competent witness at the time of the accident, and properly identified by him, often assumes a wonderful importance at the trial when other testimony is indefinite as to dimensions.

In death cases the coroner's inquest should always be attended by investigators and the names and addresses of the witnesses secured, together with the purport of their testimony. Such inquests are usually reported by a court stenographer, and if desired a transcript of the testimony may then be obtained. In some sections where this is not customary, arrangements can usually be made for the attendance of a good stenographer. Another source of information of less accuracy is the record of the police department, which commonly contains the names of supposed witnesses. While some of these may be purely fictitious, they should be looked up immediately with the idea of interviewing all actual witnesses before they can be examined by the opposition.

The facts concerning the accident having been obtained by a local investigator or attorney, the question of adjustment is next considered to determine whether the case should be settled; and if so, for how much. The advisability of adjusting always depends upon the legal principles applicable to the facts ascertained, plus the probability of a successful defense and the expense and inconvenience of litigation even if the outcome be fortunate. The value of the claim to the insurer depends upon these items and upon the local conditions, that is, the general attitude of the courts toward damage suits; their tendency to submit cases to the jury for determination and the size of the verdicts usually rendered in similar cases. It must be remembered that insurance companies

are not in business to make leading cases for the purpose of crystallizing the law of negligence in the various states. Where the facts ascertained show the claim to be in the twilight zone between liability and non-liability, or indicate an opportunity and probability of a change in the testimony of some of the witnesses with resulting liability, the claim should be adjusted for a reasonable amount. Law suits are expensive for the insurer and annoying to the insured even if successful and a favorable compromise is ordinarily preferable to a good defense. If settlement is determined upon, it may be effected directly with the insured, since the contract is made with him. But as the policy is intended for his protection, this is seldom resorted to unless the insured should desire it for reasons of his own. The various standard forms of policies contain a provision giving the insurer the option of paying the principal sum and withdrawing from the case. This is seldom done, however, as it is unsportsmanlike and expensive, imposing upon the insured the great burden of defending a suit for which he is but illy equipped. Settlements are, therefore, commonly effected directly with the injured, releases being taken in the name of the insured.

Settlements with the injured vary according to the legal status of the claimant. With an adult male, a general release running to the insured executed in the presence of witnesses and completed by payment of the consideration is ordinarily sufficient, although at times where fraud is feared, an acknowledgment before a notary or justice of the peace should be insisted upon. Releases from foreigners ignorant of the English language must always be taken through a competent interpreter, who should translate and fully explain the instrument, appending to it his certificate to that effect. If the injured be a married woman, there must be obtained in addition to her release, a further release from

her husband covering his claim for loss of services. The method of settling with minors differs according to the laws of the several states. In some a guardian must be appointed, qualify and settle under order of court. In others, a friendly suit is brought through the father as next friend, settlement being made with him. In still others, no valid settlement can be made so as to preclude the minor from disaffirming it upon reaching his majority. Valid settlements with minors are best effected under the advice of local counsel, but care must always be exercised to obtain a release from the parent for loss of services of the child.

While celerity in making adjustments is an all-important feature, still there is with every claim what might be called the psychological moment for broaching the subject of settlement; a time when the claimant is in his most receptive mood, expecting a proposition and possibly in need of money. This can be best detected and taken advantage of by the adjuster who is in touch with the local conditions.

Where claims involving more than trivial injuries fail of settlement, suits usually result against the insured, and are referred to the company for defense. The attorney selected by the company is as expert in this particular branch of litigation as the local bar affords and must be skilled in all manner of dilatory and discouraging pleadings and well qualified to take advantage of any defense allowed by the laws of his state. His prestige and reputation for ability are often of incalculable value in the settlement of suits prior to trial, a time when a good compromise is often of more value than the greatest trial skill. But such skill is not to be belittled, as the defense must be carefully prepared on questions of law, as well as of fact, and supplemental investigations under the attorney's guidance are usually necessary to fill up any gaps revealed by an examination of the plead-

ings and decisions. The presence of an adjuster or investigator at the trial of the case is often necessary to aid in handling witnesses and preventing the plaintiff's counsel, or his satellites from subducing or misaffecting them, practices more often resorted to than is generally supposed. Should the trial result in a verdict against the insured, and an appeal be decided upon, a stay of execution is secured by giving a bond, which is, of course, signed by the insured who is the nominal defendant. In event of the affirmance of the judgment by the appellate court, it must, of course, be satisfied. Many liability policies require such payment to be made by the insured, although this requirement is habitually waived where solvency is unquestioned. In any event, the proper certificate must be obtained showing the satisfaction of the judgment so that the bond may be released.

For a better understanding of the machinery necessary in handling the adjustment of claims under this class of insurance, a short explanation of the organization of the claim division may not be amiss. This division is a more or less complicated organization, consisting ordinarily of a home office claim division, having general control over all claims, adjustments and litigation through branch claim divisions, local adjusters and attorneys. The official in charge of the home office claim division numbers among his subordinates, claim examiners, whose duty it is to determine whether or not reported cases are comprehended within the scope of the various policies; correspondents who handle the various reported accidents, determining generally the steps to be taken, necessity for and sufficiency of investigation, and advisability of settlement; and corresponding attorneys who supervise the handling of litigated cases, determining the sufficiency of trial preparation and the advisability of appeal. Local claim divisions are usually under the supervision of a manager, who is assisted by various

investigators and adjusters, and if the local business is of sufficient volume, an attorney who devotes his entire attention to the handling of law questions growing out of this class of business. If less voluminous, local attorneys skilled in the defense of negligence suits are employed for the handling of litigation and such legal advice as may be necessary. The term adjuster is applied, strictly speaking, to men who make the actual settlements but this work is so closely interwoven with that of the investigator who ascertains the facts, that the distinction is lost sight of except in larger cities where the volume of business warrants the segregation.

This extremely important and necessary department of every company writing employers' liability insurance deserves a more comprehensive presentation than is here given, as it constitutes a great channel through which the premium income is in part diverted from surplus or dividends. Unless it is guarded with eternal vigilance and exceptional ability, financial ruin may easily result.

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CHAPTER XLVII

HOME OFFICE MANAGEMENT

BY S. HERBERT WOLFE

A CHANGE has taken place in modern business methods, the result of an economic development that can be directly traced to the new relationship between purchaser and vendor. This change applies with equal effect to all commodities, beef, potatoes, insurance or financial credits.

Not only has this economic modification had its effect upon office management, but in addition has left its trace upon the conditions surrounding the office manager. It may justly be claimed that the one is a reflex of the other, but without attempting to assign any real cause for the change we must appreciate that effective office management today calls not so much for a participation in the actual work to be performed as it does for one possessed of great executive ability, for one who is able to direct his subordinates, who is prepared to pass rapidly and equitably upon the quality of their services, and above all for one who is capable of weighing present tendencies in order that future results may be foreseen.

The subject of " Home Office Management " is a broad and comprehensive one in its relation to any form of insurance but becomes particularly so when applied specifically to liability insurance. There is no branch of underwriting which is compelled to deal so frequently and so intimately with human nature in all its aspects as liability insurance; this of necessity carrying with it the requirement that the head of a liability company must possess not only ability as an underwriter, but must bring to his work the characteristics of a good judge of human

nature for, upon the possession of that quality will depend to a large degree not only his personal success, but also the progress and development of the corporation which he represents.

It may be assumed, therefore, that the proper consideration of this topic will carry with it an examination and investigation of the relations of the management with all of the various activities in which the organization is interested, rather than a mere statement of the different departments and their duties. These activities take two distinct forms:

- (a) Internal affairs of the office.
- (b) External relationships.

It will simplify matters greatly if for the present we consider each of these separately and analyze the component parts of each. It will be seen, for instance, that the internal office management may again be subdivided into the following heads:

1. The Agency Department.
2. The Underwriting Department.
3. The Accounting Department.
4. The Claim Department.
5. The Statistical Department.

Agency Department

To the agency department has been assigned the first position, for it is the one which creates the necessity for all of the others. No matter how capable an underwriter he is, how clever a statistician or how thorough an accountant he may be, the office manager must take into account the necessity for obtaining business. The agency department should, therefore, be developed along sane and proper lines and should be composed of representatives whose standing in the community will entitle the corporation which they represent to the respect and confidence of those with whom they will be compelled to

transact business. If it be true that a chain is no stronger than its weakest link, it may be stated with equal truth and force that no corporation can be considered as any better than its humblest representative. While the foregoing remarks indicate a full realization of the importance of the agency department, it may be correctly stated that in recent years its privileges have been over-developed. By this is meant that many of the principles of certain offices (including conservative underwriting) have been sacrificed in order that a large volume of new business might be placed upon the books. The writer has no sympathy with the idea that a large premium income covers a multitude of sins; many of the evils which are now found in the business can be directly traced to this greed for inordinate growth. The agency department of the organization should, therefore, receive the careful attention of the manager in order that the proper subordinate may be placed in charge of it and constant care exercised to ascertain whether he is imbuing his field men with proper standards.

Underwriting Department

The agency department is charged with the duty of soliciting and offering risks to the company; the underwriting department is charged with the duty of separating the sheep from the goats. The agency department may be compared to the streams which furnish the water supply for some great community; an underwriting department, in following out the simile, may then be compared to the filter bed, which receives all of the supply but rejects the impurities and improper bodies. As the health of the community will depend upon the pure water supply which is received from the filter beds, so will the success of a liability insurance company depend upon the integrity and acumen of the underwriter who is keen enough to discern the bad risk and eliminate it before it

has had a chance to cast its baneful influence upon the loss ratio. There is no department of greater importance to the welfare of the company than the underwriting department. The success or failure of the company may be ascribed more to it than to any other factor or factors in the organization.

Accounting Department

After the risk has been submitted by the agency department and accepted by the underwriting department, it naturally passes to the accounting department, where the policy is written, the necessary cards made out, the proper charges against the agent made and all of the necessary steps taken to make the protection offered to the policyholder an accomplished fact. There is but little need to enlarge upon its duties; it would be impossible within the confines of this chapter to discuss the many interesting situations which are developed in the accounting department. It must not only carefully keep track of the transactions within the office, but also see that a careful record be made of collateral issues, such as the effecting of reinsurance when ordered by the underwriting department, the examination of the reinsurance policies when they are received and the cancellation of reinsurance policies when the necessity for the reinsurance has disappeared. In the course of his work the writer has seen many examples of carelessness in this important matter; companies have continued to pay for reinsurance upon risks which have been cancelled on their books and the resulting loss has been a considerable factor. The collection of the amounts due from reinsuring companies for losses is also an important matter, which should be entrusted to the accounting department; in fact, the head accountant of a liability insurance company can occupy the unique position of acting as a balance wheel to the other departments by keeping close watch upon their

receipts and expenditures; he can be of great service to the manager by directing his attention to the unusual features of the business, which not infrequently make their first appearance in the accounting department. The head accountant while he may be unable to ascertain the true cause of an abnormal condition, is in a position nevertheless to call the attention of his chief to its existence. In this way many leaks have been stopped before they grew to such proportions as to seriously affect the future existence of the organization.

Claim Department

The claim department is an important one in the business of an insurance company, as the treatment which a policyholder receives when he is compelled to make a claim against the company creates a greater impression and has a more lasting effect than his treatment at any other time. Some claim adjusters make the mistake of going upon the assumption that every claimant is attempting to take an unfair advantage of the insurance company. Treatment of that kind is particularly shortsighted, as it results in the creation of a feeling of antagonism between the company and its client, and establishes a relationship which is not conducive to good results either in the settlement of the claim or in future business matters.

The proper organization of the claim department requires that the notices as they are received either from the agent or from the policyholder directly, shall be examined for the purposes of determining whether the policy was in force at the time of the accident, whether the policy contract held by the insured covers the accident which has happened and whether any steps should be taken immediately to protect the interests of the company. Room for misunderstanding exists in the matter of employers' liability policies, as many intelligent

insured do not understand that a liability policy differs from an accident policy in that it does not agree to pay compensation for accidental injuries, but merely agrees to hold the insured harmless from the effects of any action instituted against him by an employe, as the result of an accident. Much trouble and annoyance could be saved if this fact were tactfully brought to the attention of the claimant under a liability policy.

After receiving the notice of an accident, the head of the claim department puts into motion the machinery necessary to protect his company; he must ascertain the circumstances surrounding the claim to determine whether there is any collusion between the parties; he must find out whether all of the steps have been taken to promptly secure the necessary evidence which will be vital to the company's protection in the event of a trial and about which the insured may either be ignorant or indifferent; he should require such proofs as will develop any peculiar phases of the claim, and he should familiarize himself with every detail of the occurrence so that he may be in a position to answer the questions of the manager in an intelligent and complete way.

From the foregoing it will be seen that the preliminary work of the claim department is important. When, however, the matter of settlement arises, the necessity for tact and good judgment increases. The adjustment of a policyholder's claim may create either a staunch friend of the company or a disgruntled enemy, who will lose no opportunity to cast discredit upon the company which has not made what he considers a fair settlement. The head of the claim department should possess not only the ability to detect errors in a claimant's statements by means of proper auditing devices, but he should be able to marshal his facts in such a way as to convince the claimant of the injustice of his claim when such a condition exists.

Statistical Department

The last of the internal departments—the statistical department—suffers from the disadvantage which any theoretical department suffers in any business undertaking. It is an unfortunate fact that many practical business men are inclined to sneer at theory. No greater mistake could be made by any manager. A properly equipped statistical department enables the underwriter to determine whether the actual experience on any given risk or group of risks is consonant with the expected happenings upon which the premium had been based. If the manager of a liability insurance company is able to digest the facts which are placed before him by a properly conducted statistical department he will be in a position to determine many important and necessary facts; he can tell whether the various units of the agency department are providing their full quota of business, he can tell whether his actual losses are greater than the expected, he can tell whether his losses from any particular locality are abnormal or excessive, and he can keep a close watch on every department except the accounting department, which is really an adjunct of the statistical department. A statistical department conducted in a practical and intelligent way is the right hand of the office manager and if its warnings are heeded losses far in excess of the cost of its maintenance may be prevented.

In thus briefly referring to the various departments of a liability company which are found in its home office, it has been attempted to give utterance only to general statements, many of which undoubtedly will be considered as platitudes by the practical underwriter. It would be manifestly impossible to do anything else than make a broad, general statement of the different departments which require managerial attention. There is, however, another phase of the business which must not be lost

sight of, and which requires no less careful attention upon the part of the manager. His relations with the "outside world" may at times assume a prime importance. The most important of these relationships are the following:

1. The Policyholder.
2. The Insurance Department.
3. The Stockholder.

The Policyholder

The relationship between the company and the policyholder has undergone a great change within the past decade; in former years the insured knew only his agent or broker, cared little for the corporation issuing his contract, and in many cases was unable even to recall its name. At present the tendency among careful insurers is to scrutinize the policies offered to them so that they may be in a position to reject policies in companies which either lack financial strength or are notoriously dilatory in the settlement of their claims with policyholders. No company can hope to succeed if the treatment of its policyholders lacks frankness and honesty. The wise manager is he who looks upon his policyholders not in the same way as does a short-sighted claim adjuster, but rather as a body of customers from whom valuable suggestions can be obtained, and who if properly treated can be converted into staunch friends of his institution. The experience of one of the large fire insurance corporations which was completely ruined by the fire in San Francisco may be cited as illustrating this; its rehabilitation and restoration to the important place which it now occupies can be ascribed to no other cause than the willingness of its policyholders to co-operate with it in the solution of what seemed at the time an almost impossible problem. Years of proper treatment had left their effect upon the minds of the policyholders and repre-

sentations which were made by the managers in the efforts of restoration were looked upon not with suspicion but with the confidence engendered by so many years of honorable and upright dealing, with the result that the policyholders assisted the managers in putting the company on its feet. This should be a lesson to the manager of every insurance company—whether it be life, fire, liability or any other form.

Insurance Departments

The connection between the insurance department of a state government and the office management of a liability company may not be apparent at once, but any organization which neglected to provide for some method of dealing with departmental problems would be defective. The duty which an insurance commissioner has in the line of protecting the policyholders of an insurance company carries with it an obligation to see that the company has in its possession at any given time a sufficient amount to meet the future payments on claims which have accrued to that time. The nature of liability claims is such that many of the payments necessary to settle them are deferred for a number of years. It would be unsafe, therefore, to permit a company to use current receipts for the purpose of meeting the liabilities which have accrued in the past. It is this situation which has given rise to the formulation of rules for determining the loss reserves for liability companies.

The annual statement blank required by insurance departments presents a formidable appearance, but it contains no item which should not be in the possession of a manager who aims to keep in close touch with his business. A properly equipped statistical department can furnish all of the information asked for without the expenditure of much time or labor. Ten years ago the departmental requirements were simpler than they are

today, and it was impossible to determine from an inspection of a company's report whether its business was being conducted along proper lines; today the manager of a company can, with the information shown in his departmental statement, determine whether his premiums are sufficient, whether he has in acceptable assets the present value of his liabilities as fixed by statute, and can put his finger upon the weak spots of his organization. While at times the requirements of an insurance department may seem onerous, they are in reality safety checks upon the company's transactions. Intelligent supervision should be welcomed by the company manager and in an insurance commissioner whose requests have been properly honored the manager will find a valuable ally and friend.

The Stockholder

To his stockholders the office manager looks not only for financial support but looks upon them also as a body from whose members are selected those charged with the duty of conserving the funds of the institution. The questions of financial policy are of course entrusted to the board of directors, and no extended comment upon the organization necessary for this department is required. The records pertaining to the investment of funds originate in the accounting department and require but a passing reference. While the office manager is an appointee of the stockholders (acting through the board of directors) he should never permit that relationship to affect his judgment on the subject of dividends. Some companies have made returns to their stockholders when the funds should have been accumulated for the protection of the policyholders. It is in this direction that the manager will find the greatest necessity for the possession of "backbone." It is not the pleasantest thing in the world to be compelled to tell your stockholders that an abnormal

loss ratio or a new requirement indicates the advisability of declaring only a small dividend, but at times such a procedure becomes necessary and the duty should not be shirked.

In thus briefly discussing the organization and management of a liability company reference has been made only in a minor way to those requirements which should be possessed by the manager himself. Upon him of course devolves the entire responsibility for the success of his institution. Not only must he be familiar with the duties of the heads of the various departments, but he must be able to pass upon those broad questions of policy which frequently result in the making or the unmaking of a liability company. He should not only understand the assumption of responsibilities but it is also important that he should understand how to share his burdens with his subordinates. The general of an army cannot be expected to know the details of the transportation of the necessary supplies for his force; not that those details are unessential to the well being of his army, but he must devote his energies to other and more complex problems relying upon his quartermasters and his commissaries to look after the details. In the same way the organization of the office of a liability insurance company should be such as to relieve the manager of most of the routine details, in order that he may be free to devote his attention to problems affecting the entire structure. Too great attention to details results in lack of perspective. An aviator hundreds of feet above the surface of the earth is able to observe objects far beyond the horizon of one who remains on terra firma. An office manager can frequently perform good service by giving heed to problems of political economy and observing the tendency of legislatures and the public mind.

The manager today must be prepared to organize his office in such a way as to permit it to accommodate itself

to changed conditions; thus at present this flexibility is necessary in order that the records and the system can gradually be worked into the modifications demanded by the public's attitude on the subject of liability insurance. The tendency of legislatures in the matter of employers' liability insurance is to practically convert that form of insurance into ordinary accident insurance. In some of the states there are constitutional objections to making this protection compulsory, and in such cases the employer is induced to accept the new order of things voluntarily by penalizing him if he does not; these penalties taking the form of the abolition of the usual forms of defense. On the other hand, the employee is also urged to come within the statutes and his failure to do so is likewise penalized.

Tendencies of the kind just mentioned must of necessity receive the attention of the manager. There is another relationship, however, not yet referred to, but which is not lacking in importance. The success of a company can be accelerated or retarded by the manager's attitude toward the other companies. In every branch of the business, associations have been established for its betterment. In the case of liability companies the associations have not at all times been accepted in the spirit in which they were created. The "raiding" of another company's agents, the circulation of defamatory literature and the cutting of rates below the safe point, are instruments which while they may result in a temporary increase in the premium income, must eventually have a blighting and demoralizing effect upon their user. Fair competition in the insurance world is a stimulus to business, to which none at the present time can object; unfair methods lead to financial ruin and the destruction of self-respect.

In the foregoing paragraphs the attempt has been made to briefly outline the various problems which con-

front the office manager to whom is entrusted the duty of organizing the various departments of his company. To attempt to indicate the specific duties would be impossible in an article of this kind, but he who has read the foregoing statements must realize the amount of tact, general education and business training which the successful manager must bring to his work. His is no light duty; there will be times when the adherence to ideals will apparently result in financial loss; there will be times when the actions of less scrupulous competitors will seem to give them an advantage. The fact must remain, however, that in the long run the successful office manager will be the one who conducts his business in such a way as to at all times retain the respect of his associates, and what is more important—his own self-respect.

CHAPTER XLVIII
AGENCY MANAGEMENT

BY FREDERICK S. MOORE

LIABILITY insurance is that form of insurance in which the insurer agrees to afford to the owner of the property insured protection against loss by reason of legal liability incurred by the owner in the use or enjoyment of his property, whether such liability accrues through the negligence of the owner in the use or enjoyment of his property or by reason of some positive act done by the owner, his agent or servant in such use or enjoyment.

This form of insurance protection has in its development as a business, placed itself into several well known groups. Thus we find insurance protecting owners or tenants of real property against liability incurred by them toward the public by reason of their negligence, for example, in permitting their property to become out of repair; protection to employers of labor, against the negligence or, in some cases even wilful wrongs of their employees; to those who own or operate elevators; to those who own or operate automobiles or teams; and, in general, to anyone who may in the use or enjoyment of his property incur legal liability.

Having thus briefly defined liability insurance, we shall now define agency. In its broadest sense agency denotes acting for or on behalf of another and an agent is one who so acts. The extent of the authority of an agent is a matter of agreement between him and his principal and agents have been brought into classes according to the extent of their authority to bind their principals. There is no exception to this classification in the method of conducting the liability insurance business and agents

are there grouped into classes known to the public as resident agent, general agent, special agent, and agent, and the duties of these various classes of agents differ with their titles and, generally, in the manner of receiving their appointments. For example the resident agent, general agent, and special agent generally receive their appointments direct from the manager of the liability department at the home office of the company and the agent is usually appointed by any one of the foregoing classes of agents.

The duties of the resident agent and general agent are similar and these agents differ as a rule only in their authority, the resident agent having charge of a larger territory and having greater powers than a general agent, and they both act in an executive capacity almost entirely and rarely do they solicit business or personally do the work which usually falls within the scope of the duties of an agent, although many general agents control personally a large volume of direct business. They divide the territory allotted to them into smaller parts and assign an agent to each of these smaller parts and they are in most cases the officials to whom the agent usually makes his reports upon the business of the company, though in those cases where an agent receives his appointment direct from the manager of the company or from the home office he reports directly to the company.

After an agent has received his appointment from a duly authorized representative, there is still a further step to be taken before he may perform his duties and that step is to secure the approval of the state to his acting as an agent. As a general rule the company attends entirely to securing the necessary license or permission from the insurance commissioner or other state official and once this license is issued, the agent may begin.

The principal duty of an agent, who has been duly

appointed and licensed as indicated in the foregoing paragraphs, is to secure desirable business for his principal. It is true that he may occasionally be called upon to perform other work in addition to the securing of such business, but by far the greater part of his time and attention must be devoted to the procurement of business. The first requisite, therefore, for the successful agent is that he should be thoroughly familiar with the basic principles which govern getting business. The faithful performance of his duties not only affects him personally but his company is very often judged by his personality and his thorough familiarity with his business.

The first requisite is that he should completely know what he is selling. This means that he should be thoroughly well informed upon every contract written by his company in his territory; he should know the wording of his contract, the specific liability against which it insures, the pecuniary amount of protection which it affords to the insured, the various modifications or additions to the policy which may be made by the use of riders and similar devices, and the cost of such protection to the insured.

The ways of acquiring this requisite knowledge are many. It may be done by taking courses in several American schools and colleges which, having awakened to the necessity of providing a thorough business training, have established practical courses in several lines of business endeavor, among others in insurance, and these courses, being conducted by men who have had long experience in the business, afford most suitable training for the business of insurance. Some of the liability insurance companies are now conducting schools of their own which they permit their agents to attend and in which they treat the business from a thoroughly scientific and at the same time practical standpoint.

It is, of course, not possible for every prospective liability agent to attend courses either in college or at the

schools founded and maintained by the companies. In such cases, therefore, the agent must educate himself and in his endeavors to do so he will find that the company most earnestly sympathizes with him and affords to him every facility for his education. All companies issue a book called a manual and in this manual will be found complete instructions as to the various forms of liability contracts which his company will issue. It also contains lists of the various businesses upon which the company will write insurance, contains a rate schedule and most explicit instructions which enable the agent to ascertain the exact cost of any protection which he is offering to a prospective customer.

In addition to the information which an agent may obtain from a systematic study of the manual, further and more detailed information may be obtained from the special agents of the company. Recognizing the importance of properly instructed agents, the home office employs a special agent to travel over a given territory and there to oversee the work of all the representatives of the company. This special agent makes frequent visits to each of the agents, instructs them as far as may be necessary in the general policy of the company, answers any questions which they may put in regard to the business policy of the company or in regard to details of contracts, pointing out clearly to the agents the protection which any particular contract will afford to any customer, assists the agent in writing business and instructs him in the best manner in which to approach and procure the business of persons whose insurance the agent is endeavoring to secure for his company.

It is extremely important that the agent should have knowledge of the principal steps to be taken in case of loss under the policy; and, to make adequate provision for imparting such knowledge, as well as properly to represent the company in case of loss, the company

employs another representative who comes direct from the home office or the office of the general agent of the territory and is known as the claim adjuster. This official is usually acting under the direction of the company's legal counsel and is as a rule an expert in the various laws which govern the liability insurance business. He is always ready and willing to instruct the agent upon questions which come within his province and to inform him upon the probable causes of action, liability and damage suits against a prospective customer and he will also point out the amount of indemnity which may be recovered under any special set of circumstances and, in general, instruct the agent in the proper steps to be taken in case of loss.

Still another factor in the thorough education of an agent is his knowledge of his territory. The importance of this knowledge cannot be overestimated, for it is of the utmost importance to his business success that the agent should know most intimately the various kinds of business transacted within his territory, not only that he may be in a position to give to prospective customers his most efficient service, but also that he may be able to inform the home office of any facts which may modify its action in case it wishes to change its business policy within his territory, to modify its contracts, or to attempt to expand its business there upon the introduction of changes in business methods.

Having made a thorough study of the manual and of his territory and of the information which he has received from the special agent and the claim adjuster, the agent is in a position where he may hope to write business. To do this well, however, he must possess or must cultivate certain personal traits or characteristics which are most essential to his business success. He should always remember that the foundation of this business success is a thorough knowledge of the goods which he is

selling and that next in importance to this fundamental knowledge is a knowledge of the best manner in which to present the merits of these goods. As has been said before, the public judges the company by the agent and it is therefore of the utmost importance that the agent should be absolutely accurate and truthful in every statement which he makes. It is obvious that unless the agent thoroughly understands his contracts, he will inevitably make statements which are inaccurate or untrue and as a result, not only is his own success impaired, but his company is also liable to suffer grave injury. Hence it is wise for the agent to study each prospective customer and to familiarize himself with the wants and needs of that customer. To illustrate—let it be supposed that the business of a prospective customer, for example, the owner of a building is sought by the agent, and the agent is asked by him for information as to what kind of protection liability insurance affords. In answer to this question, the agent should answer that the protection is two-fold—protection against the annoyance of attempting to settle claims arising from the ownership of the property and protection against and indemnity for any pecuniary loss sustained within the terms of the policy. The agent should make it clear to the customer that the company has a specially trained corps of adjusters and attorneys who will without expense to him preserve him from annoyance and defend any suit which may be brought against him and, if such suit should result in a judgment against him, the company will pay such judgment within the limits of the policy. Having thus firmly and accurately laid the foundation, the agent should then inform the customer as to the probable causes of action and reason for which liability actions may be brought against owners of property and should convince his customer that liability insurance is a business necessity which the customer cannot afford to ignore.

Since liability insurance has an economic value second almost to no other branch of insurance, the agent should make a strong point of insisting upon the business value of this form of insurance. Large owners of property and employers of labor are unfortunately only too familiar with the avidity with which those who suffer injuries, however trifling, are prone to exaggerate their condition and they also know how the most trivial injuries may be seized upon by unscrupulous lawyers who are ever on the watch to prey upon the necessities of the poor and ignorant, and magnified out of all proportion in attempts to force unjust settlements. The prospective insured does not know the methods of defeating such claims and cannot even begin to make as good settlements as the company with its specially trained adjusters and attorneys who are conversant with all the artifices resorted to by shyster lawyers and malingering claimants. By presenting these facts clearly to the prospective customer, and presenting them from the purely business viewpoint that such protection is better and cheaper than the employment of the assured's own attorney to adjust the claim, the agent may frequently secure a large line of business and one profitable alike to himself and to his company.

And the matter of the proper presentation of the subject matter of liability insurance from the business point of view suggests certain other qualifications which are valuable in any business but are of peculiar value to the liability agent. The foremost of these qualifications is tact. Many a good customer has been lost and much business has not been closed simply because the agent, though thoroughly conversant with all the details of his business, has been lacking in the tactful handling of his customer. As an example of this, one of the most common causes of failure to close desirable business is the inability of the agent to judge when to see his prospect

and when to leave him alone. If a man is busy with pressing affairs, or if he is fatigued, it is extremely tactless to attempt to interest him in a new proposition and the wise agent will at once perceive the situation and postpone his interview until a more propitious time. A volume might be written upon this subject alone and even then the subject would not be adequately covered.

In addition to tact, the agent must also practice the virtues of business honesty and sincerity. There was formerly a more or less prevalent impression in every community that business success was founded upon, or at least was contributed largely to by practices which were in the last analysis shady if not absolutely dishonest. Happily this delusion is passing and a more ethical viewpoint is being applied to business, hence the day of the business knave has ended and the business world is recognizing the necessity for honorable dealing and is insisting upon its practice.

Heretofore, we have considered our subject from the viewpoint of the relation of the agent to the public and we shall now discuss the relations of the agent to his company. It is customary for a company to furnish to its agents most of the office supplies necessary for keeping a record of the business relations of the agent and the company, and we shall now consider what these records contain and how they are kept.

After an agent has obtained the business of a customer, an application blank containing all the information necessary to underwrite the risk is signed, sometimes by the customer, sometimes by the agent. This application is one of the blanks furnished by the company and it contains numerous questions in relation to the physical characteristics of the risk and sometimes contains questions relating to the moral hazard or the chances of loss which the company may sustain by fraud or collusion or other dishonorable actions of the insured. This blank

properly answered is in most cases the sole basis upon which the company must judge of the fitness of the proposed risk, though of course it has the ordinary business methods of informing itself as to the standing of any particular business; for example, commercial agencies with their system of making special investigations and reports upon any particular firm or individual, the investigations of the special agent of the company, and consultation with other companies as to their dealings with or knowledge of the proposed insured.

When this blank has been properly filled out it is submitted to the company, or to some officer of the company who has charge of the underwriting, and this officer makes such investigations as he may deem necessary and thereupon a policy is either issued or the application is denied. If the policy is to be issued it is at once executed and delivered either to the agent or directly to the insured.

It sometimes happens that certain agents have authority to issue the policy direct without referring the application blank to the home office or to an underwriter, and in such a case the agent himself writes the policy upon properly executed blanks provided by the company, makes his own records of the policy and transmits either the application blank or a copy to the home office where it is properly recorded on the books of the company.

At the close of each day a blank called a daily report, and furnished by the company, is filled out by the agent and by him submitted to the home office. This daily report is an abstract of all the business written by the agent during the day which it covers. Of course, this information is not in great detail and is just sufficient to permit the company to make adequate records of its policies which are in force. Many agents consider it essential that they also should keep records of the business which they have written for their companies and these records are kept in one of two ways, either in a

record book provided by the company for the purpose, or by the card system where each policy and the details thereof are recorded upon a separate card. The advantages of the latter system are obvious, for it is of great importance to the agent that he should know when a policy expires so that he may procure the renewal of it and by employing the card system the card may be placed under a date shortly before the expiration of the policy and when the agent consults his prospects he will find this card and effect the renewal of the policy.

Of course, records of the money transactions between the agent and the company are kept and, since these are kept according to the usual methods of insurance book-keeping it is not necessary to expatiate upon them at this time.

In addition to the preceding record many successful agents keep another set of cards for the purpose of affording to them instant and complete information upon insurance which may be desired by prospective customers. These cards contain the name and address of the prospective customer, his particular line of business, his probable payroll, the number of teams which he employs in the transaction of his business, the number of elevators in the building where his business is conducted and all similar information bearing upon the kind of liability insurance which he may require, and its cost. Suitable arrangements of these cards are made according to the system of the particular agent, some agents arranging the names of the prospects alphabetically and others arranging the cards according to some plan of streets or localities. Whatever the arrangement may be it is made with the purpose of securing complete information and securing it in the least possible time. Agents who employ this system also make notes or memoranda upon the cards informing them as to the most convenient time when the customer may see them and notes of such

other items as may be essential to secure the business. And in this connection it may be said again that very often the successful agent is the agent who has at his fingers' ends all the information necessary properly to advise the customer as to the kind and amount of insurance which it is desirable for him to carry and the exact cost of carrying such insurance. If the agent has such information readily available it is obvious that he will save the time of his customer as well as create a better impression of himself and his ability in the mind of the customer.

One thing should be borne in mind by every agent and that is no matter how thorough his office system may be, no matter what reputation his company may have, no matter what assistance is rendered to him by the officers of the company, he cannot succeed unless he works faithfully and conscientiously for the production of business. The public is by no means alive to the value and necessity for liability insurance and it is a very important function of the liability agent to assist in the work of educating the public. This task is at times onerous but the rapid growth of the business, the confidence felt in it by that portion of the public which knows it, the increasing number of able men who are engaging in the business, all these facts point to a steady and continued increase in the business and to an upbuilding of contracts by the agents which will result in a generous income to them and continued profits to their companies. But these results will not come without hard and intelligent work and without a consciousness on the part of the agent that his business is not only a business which has a distinct economic value but is also a vocation which is honorable to him, productive of good to the community and one which calls for ingenuity and ability of the highest order.

CHAPTER XLIX INSPECTIONS

BY DAVID VAN SCHAAK

INSPECTION is one of the most important features of the service which a well-equipped liability insurance company places at the disposal of its policyholders. When properly conducted, it not only points out dangerous conditions which should be remedied, but it recommends mechanical and material safeguards for these conditions or it suggests safer methods of doing work for which no such safety devices can be provided in practical form. The trained eye of the liability inspector often sees points of danger not apparent to the ordinary employer or his foreman, either because of long familiarity with them in their present condition or because of ignorance of the fact that accidents can result from them.

The variety of ways in which accidents can happen even in one operation is so great that few, if any, plants are likely to have had experience of them all. A danger point may never have caused an accident in a particular plant, but its record elsewhere may have been such as fully to have impressed the inspector with a realizing sense of its latent possibilities. Employers, too, are largely dependent upon their subordinates for safety conditions and safe working. These subordinates often fail to realize the importance of accident prevention, allowing dangerous conditions to exist and work to be done in a manner which, while it may turn out product, is inherently unsafe. The liability inspector is thoroughly imbued with the desire to prevent accidents, and his recommendations frequently reveal to the employer a situation with which he otherwise would not be likely to become familiar.

The wide experience of a liability company's inspection department and the special research work which it is constantly doing enable it also to recommend standard safeguards, not merely such as will "do" but the best known means of guarding against particular dangers. This standardization of safety methods is impossible to the ordinary employer. He cannot devote the necessary time and money to the work nor has he the opportunity to get a sufficiently broad range of observation and experiment.

The inspectors of a liability company are practical men, carefully selected for their general knowledge or for their training and experience in some special line, and they are constantly being equipped with information regarding new methods which has come to the attention of their company in one way or another. For this reason they are often able to suggest an inexpensive yet thoroughly practical guard for a danger point which otherwise might have to be protected, if at all, by a patented and possibly a costly guard.

Liability inspections may be classified, broadly speaking, as follows: Elevator, factory, contractors', mine, mercantile, teams, automobile, theatre. Mention of some of the principal features of the inspection in these classes will suggest the range and the thoroughness of the work.

Elevator Inspection

The many complications of the wide variety of elevators demand frequent and expert attention, and elevator inspectors are, therefore, chosen from men who have had practical experience in elevator construction and installation.

An elevator has a great many danger points to which most careful attention must be given. The hoistway, the car, the cables, the safety appliances, the counterweights, the operating apparatus, the machine itself, the operator,

all have their possibilities as causes of accident. An inspector observes whether the hoistway is enclosed as fully as possible, whether the entrances to it are properly protected, whether any projections are efficiently guarded and whether there is sufficient overhead clearance when the car is at its top limit. He looks into the condition of overhead sheaves, timbers and bearings, and sees whether safe access to overhead sheaves, speed governor, etc., is provided and whether there is a grating to prevent anything falling down the shaft.

The condition and attachment of car and counterweight cables are noted, as well as whether cables have enough turns around the drum when the car is at the top or the bottom of the hoistway. The position and hanging of counterweights, their strapping and bolting together, their boxing, their guides, and the extent and guarding of their guideways are observed. The car or platform, its enclosure and guarding, the method of lighting, the speed, the condition generally, receive close attention.

The safety apparatus is thoroughly examined and tested, not only the safety device proper but also any automatic limit stop, slack cable device, stop buttons and electrical cut-out used. All parts of the motive power apparatus are gone over—worm and gear, brake and connections, drum, machine bearings, thrust bearings, bolts, pins, etc., rods, strap and traveling sheaves, belts, pulleys and countershafts, valves, tanks, pump, piping, hydraulic and steam cylinders, piston rods, and every other feature. If a plunger is used, its fastenings to the car are carefully examined. Any fastening of a machine to its foundation is observed. The kind and condition of operating apparatus are noted, and it is observed whether any lever used is in safe position and whether the latch is in good condition. The inspector notes whether there is a regular operator and ascertains his age, whether he has a license if such is required, and

whether he has any apparent physical defect involving danger. He also learns whether any city ordinances or state laws relating to elevators are regularly obeyed.

Factory Inspection

Factory inspection demands a range of knowledge so wide that practically no beginner in it could be said to be fully equipped. The men engaged in it are always selected for their practical experience, training in a general machine shop or as a millwright or as a stationary engineer being an especially desirable qualification.

A factory inspector gives his attention to the buildings, sidewalks, yards and elevators of a plant, as well as to boilers, engines and machinery of all descriptions. In each building he notes the condition of the walls and foundations, what shape the floors are in, whether they are kept clear of obstructions and are not overloaded, and whether all openings are properly guarded. He sees whether stairways have good treads and are properly hand-railed, whether elevated runways and stagings are hand-railed and toe-boarded, whether the stairways, fire escapes, fire signals and exits are adequate in case of fire, and whether sidewalk stairs, sidewalks, railings, coal holes, awnings, gratings, signs and outside electric lights are so arranged and protected as to be as safe as possible.

The conditions of yards and adjacent ways are examined with care for any points of possible danger. If there are any railroad tracks in the yard, he sees whether they are properly protected—points of approach guarded or furnished with adequate signs where guarding is not practicable, tracks filled in at crossings or overhead bridges provided, frogs and points between rails and guard rails blocked, devices provided to give warning of overhead bridges, walks or wires so low as to be dangerous—and he ascertains whether the method of operating cars in the yard is safe.

In inspecting the elevators of the factory, besides going over the equipment he learns whether regular attendants are furnished, or what practice prevails regarding the running of the cars, and whether the system of calling the elevators is adequate, and he finds out to what extent the public as well as employees are permitted to ride upon the elevators, and whether an effective method is used to keep entrances guarded at all times.

The detailed inspection of the boilers is usually attended to by a regular boiler inspector, but the liability inspector in each case ascertains whether this is the practice and observes the date of the last inspection. If the boilers have not been inspected within a year, he notes the type, age, horse-power and pressure of each of them. In any event he endeavors to learn whether only experienced men are in charge of boilers, and whether safe practices are followed in the ordinary daily work. He also sees whether the boiler room is properly lighted, especially in the vicinity of the gauge glass and steam gauge, whether it is kept well cleaned up, and whether exits are kept free and unlocked. He observes whether suitably railed and lighted runways, with guarded stairs or ladders for reaching them, are placed on the boilers, lead from boiler to boiler, and provide access to all valves which need to be regularly used and inspected, whether sewers or hot-wells and steam and hot water pipes are properly covered, and whether main stop valves are easily workable in case of need, and he ascertains whether effective measures are adopted to protect men cleaning boilers.

In the engine room the inspector sees whether the engine and its equipment are in good order, whether drive wheels, fly wheels and other danger points are properly fenced, whether governor balls to which close approach is possible are guarded against contact, whether all gears are protected, dangerous shafts guarded

and projecting tail rods encased or otherwise rendered harmless, whether steam pipes, cylinders, sewers and catch basins are properly guarded and how exhaust pipes discharge. He examines the fly wheel, if it is not regularly inspected by a fly wheel inspector. He observes how emergency valves are worked, whether runways, stairs or ladders are provided to reach valves and of what sort they are, whether elevated platforms or walks are furnished with hand-rails and toe boards and how they are approached, whether stairs with railings are provided for work on top of an engine or bearings, whether the engine room is kept clean and well lighted, whether floor depressions are properly guarded and whether firm footing is provided at working points in the room. He notes particularly whether an efficient governor is provided for the engine and an automatic speed limit stop. He sees if the governor belt is in good shape or its keys and gears well secured, and, if a belt-driven governor, whether it is equipped with a broken belt stop. He ascertains whether the engineer is licensed, and he inquires as to the provision of suitable means for turning the engine off center, when necessary, without danger to employees.

In the factory proper the inspector's work is so varied that only a few of the most common matters may be mentioned. He has to see whether shafting, its hangers and pulleys are secure, whether shafting and couplings are guarded where necessary, whether there are any set screws protruding, whether belts and pulleys, countershafts, etc., are well protected, whether there are any exposed gears, sprocket wheels and chains or frictions, how cranes are guarded and operated, what is the practice regarding the use and annealing of chains, how explosives and inflammable liquids and substances are handled and stored, under what conditions hot metals and acids are handled, whether guards are provided for

such inherently dangerous machines as saws, wood shapers, jointers, punch presses and shears, and whether the feed entrance to roll-feed machines is protected. He looks to see what arrangements there are for shutting off the power in an emergency. He notes the conditions as regards light, air, cleanliness, piling of material, clothing of operators, loading of trucks, and crowding of either machinery or employees. He ascertains the method of oiling or doing other work on shafting, and whether machines are stopped when they are oiled, cleaned or adjusted. He looks into the practice followed in placing belts on overhead pulleys and removing them, and as regards allowing belts not in use to hang loosely on shafting. He endeavors to learn whether proper instruction is given to workmen, whether operators are required to examine machines, tools and appliances before using them and to report at once any unsatisfactory condition, and whether machines, structures and safeguards are regularly inspected. He looks to see whether proper signs are displayed where necessary and kept in good condition. He notes how electrical equipment is grounded and guarded and acquaints himself with the operating practices. In fact, he makes a general and close survey of the entire plant, looking out for any possible cause of accident.

Contractors' Inspection

Contracting work, too, is of such variety that only general mention can be made of it here. Many of the hazards, however, are more or less common, such as excavating, blasting, shoring, the use of hoisting and conveying apparatus, and the employment of stagings, platforms, and the like. The use and care of explosives especially demand the inspector's attention. He ascertains if the explosives are properly stored, kept at a safe distance from operations and in charge of a competent

man, if only the amounts required for immediate use are taken out at a time, if suitable thawing methods are pursued, if the blasting is done by experienced men under expert supervision, and if proper warning is given and other safety precautions taken before a shot is fired.

He examines all hoisting apparatus, machinery, derricks, booms, chain falls, tackle, slings, etc., to see if they are in good condition, inquires into the care of chains, cables, etc., and observes whether a good method of signalling is employed, whether hoisting apparatus is overloaded, whether workmen are allowed to ride on apparatus or on material being hoisted, and whether any parts of highways in which hoisting is being done are suitably guarded. He looks into the condition of boilers and engines, and ascertains whether the boilers are regularly inspected and the dates of the latest inspections, and whether the boilers and engines are run by competent men. If electric power is employed, he examines the equipment and informs himself regarding the methods of operation.

In excavation work he looks to see if the roof and sides of tunnels are safely supported, if sewers, trenches and other excavations are properly shored and the timber used of ample strength, if excavations are well guarded where necessary and provided with danger signals at night, and if any temporary crossings are safely constructed and guarded. He observes whether an ample supply of fresh air is supplied to tunnel and caisson workmen, whether the pumping apparatus is in the best of condition and the connecting pipes so located that there is no danger of their being broken by anything falling on them, and whether there is an auxiliary air supply in reserve, for use in case of emergency.

In building construction, he notes whether floors are laid on the erection of each story, whether workmen are provided with overhead covering for use when necessary,

whether scaffoldings and stagings are strong and properly built, and are provided with high enough railings and with toe boards to keep men and material from falling off, whether ladders are safe, and whether elevator hoistways, flues and other openings in floors are properly guarded. He observes whether sidewalks are kept clear, whether elevated and temporary walks are strongly constructed and provided with hand-rails, whether danger signals are provided at night and whether every precaution is taken to guard the public. He also looks to see whether appliances for loading teams and gangways and surroundings are in good condition. He gives particular attention to the matter of whether laws and ordinances appertaining to the work are obeyed.

Mining Inspection

The hazards of mining differ so from those of other industries that mine inspections demand men who have had practical experience in mine work.

The mine inspector examines hoisting apparatus with great care, to see if the cages, cars or buckets are substantial and safe, if cages or buckets are provided with suitable covers and bonnets and are fitted with rings or bars to furnish secure hand-hold for the passengers, if cages and cars have efficient safety catches and if cars are provided with proper brakes, trailers or drags, if the guide rails run from top to bottom of the shaft and are substantial, if the hoisting machinery and the pulleys, sheaves, drums and overhead supports are in good condition, and if the hoisting and other ropes are in proper shape. He looks to see whether shaft entrances are properly guarded and the guards kept in place at all times, whether there is sufficient light at landings when men are being hoisted or lowered, and whether signal codes are conspicuously posted.

He ascertains whether the hoisting engineer is in con-

stant attendance at his place of duty when there are workmen underground, whether there is efficient means of signalling between the bottom of the shaft or slope and the hoisting engineer, and how often the cages, cars or buckets, and the ropes and safety catches are examined. He looks to see what outlets are provided for escape in case of blocking of the main passage, shaft or slope, whether there is a passageway around every shaft to allow men and animals to pass without going underneath the cage, whether the machinery is suitably protected, whether the ventilating apparatus is in good condition, whether electrical equipment is effectively guarded, and whether stairs, trestles and plank walks are hand-railed. He ascertains whether the boilers are inspected and when, looks them over and observes whether steam gauges are provided. He notes how the mine is ventilated, how much air is provided, whether currents are forced into every working place, whether permanent doors used in guiding the ventilating currents are hung and adjusted so as to close automatically, whether brattices are in good condition, and whether there are attendants at principal doorways through which cars are hauled, with shelter places provided for them.

He observes whether passageways and rooms are dusty and whether sprinkling is done frequently to keep the dust down, whether fire damp is in evidence, whether the mine generates explosive gases and how they are expelled, and whether the drainage is satisfactory. He looks to see if ceilings and walls are securely propped where necessary and the timbering is in good condition, and he ascertains whether miners do their own timbering and whether an ample supply of timber is kept at each working place.

He notes the method of haulage employed and whether there are manways parallel with the haulage roads or the

passageways are provided with cuts which will permit persons to pass moving cars with safety, and he learns the regulations for haulage. He acquaints himself with the places and methods of storing blasting powder and other explosives, and ascertains whether special shot firers are employed, whether the men are ordered from the mine when shots are fired, and whether the mine is inspected before the men return to work. The inspector inquires particularly into the matter of daily inspection of the mine by the mine foreman or fire boss prior to the entrance of the workmen and the practice followed in putting green men to work, whether they are paired off with experienced miners or with other green men.

Mercantile Inspection

This class of inspection includes office buildings, warehouses, hotels, etc., as well as shops, stores and other mercantile establishments proper. The inspector gives his attention to the floors throughout the building, noting whether they are level and otherwise in good condition and are solidly supported, and observes whether all floor openings are guarded. If there are balconies, he looks to see if they are provided with railings and are safe. He examines the stairways and hallways to see if they are well lighted and if the stairways are hand-railed and the treads and supports are in good condition. Any machinery in the building is gone over to see if it is safely protected. If the boilers have not been inspected within a year, the inspector notes the type, age, horse-power and pressure of each. Elevators, passenger, freight and sidewalk, are examined, and also hand hoists and dumb waiters and any chutes or inclines for conveying purposes. The inspector notes the facilities for extinguishing fire and the adequacy of stairways, fire escapes and other exits, examining the condition of the fire escapes and observing the character of the fire signal system.

Sidewalks, railings, coal holes, awnings, gratings, signs and outside electric lights are inspected to see that they are safe and protected where necessary, and the same attention is given to yards and adjacent ways.

Teams Inspection

The inspector examines the vehicles used, looks into the condition of any windlass or other rigging attached to a truck used for moving heavy articles, observes whether any hatchways, stairways and surroundings used in loading and unloading are in good condition and guarded, and notes whether harnesses are kept in proper shape. He ascertains whether any vicious horses are employed, whether horses are properly secured while teams are being loaded, and whether the drivers are experienced men and are considerate with horses.

Theatre Inspection

In inspecting a theatre the supports of the walls and roof are examined, and the construction of the stage. The inspector looks over any elevators used, sees whether there are plenty of exits and if the exit doors open easily from the inside, and examines the stairways to see if they are well supported, their treads and carpeting in good condition, and if they are suitably hand-railed. On the stage, he examines the scenery supports, sees if top curtains are well secured and easily regulated, if the drop curtain apparatus is strong and easily controlled and if the place of the drop curtain's fall is marked, if overhead and foot lights are secure, if the switchboard is well protected, if the passageways to dressing-rooms are well lighted and if there is an asbestos curtain in front of the stage.

He looks to see if each floor of the theatre is connected with the fire escapes, and if the escapes are numerous enough, adequate, and independent of stairways. He

gives attention to the boilers, and notes the condition and guarding of any machinery in use. He examines the side-walks, coal holes, awnings, signs and outside electric lights to see if they are protected and safe, and also the floors and carpets throughout the building.

Conclusion

The above outline of inspection work, cursory and incomplete as it necessarily is, gives some idea of the careful and thorough manner in which liability inspection is made. The inspector reports conditions as he finds them to the home office of his company, together with his recommendations regarding what should be done to guard against the dangers present, either in the way of safety devices or in that of safer ways of doing the work. These are brought to the attention of the assured by the home office, with a request that the recommendations be carried out. The inspector, while at the plant, has also brought the danger points to the attention of those in authority, and has made to them the suggestions which his inspection has made him think advisable. If the assured does not inform the company within a reasonable time that the recommendations have been complied with, the matter is taken up further with him, until the plant is put into satisfactory condition or it is plain that it will not be. Often the inspector returns to the plant to see what measures have been taken to promote safety, and he always checks up his recommendations when he next makes a regular inspection.

The inspection work of liability companies has not only directly prevented many accidents through its discovery of bad conditions and the remedies which it has suggested, but it has done a great deal to stimulate the interest in the safety of working men and the public which is at present in such striking evidence. The pressure and the persuasive influence which has been brought

to bear upon superintendents and foremen, as well as owners of plants and buildings, have converted many men to full belief in safety methods, with the result that they have taken up the matter with enthusiasm. Some of the liability companies have also published and circulated widely in pamphlet form and otherwise the information which they have gathered for and through their inspections, and this, too, has helped much to forward the safety movement.

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CHAPTER L
STATISTICS AND RESERVES
BY BENEDICT D. FLYNN

Statistics

LIABILITY insurance, because of the complex nature of the business, presents a difficult problem in the compilation of its statistics for the purpose of formulating an experience and in the interpretation of this experience for the determination of rates and reserves. The history of a liability insurance policy, so far as the accounting records of the company are concerned, is a succession of entries beginning with the estimated advance premium payment, and followed by payments for medical aid, adjusting expense, claims, legal expense and suit settlements. All of these items must be properly assigned and indexed so that they may be traced easily in the experience records. In addition to the statistics drawn from the accounting records, a record must be kept of the many notices of accident received, and of the suits which develop. It is necessary, therefore, that the system used in compiling this complex mass of statistics be comprehensive and smooth running and that care be used in its maintenance.

The work of interpreting these statistics, and of utilizing them in such a way that safe conclusions may be drawn therefrom, gives wide opportunity for the exercise of that good judgment which can only come from long experience and study of the business in all its aspects. To throw light upon the value of this statement let us examine the make-up of liability experience. Unlike most other forms of casualty insurance experience, the elements of liability experience are deferred in their nature.

The premium on the greater number of the policies issued, is based upon an estimate of the payroll to be expended during the term of the contract and is subject to an adjustment in the form of an additional or rebate premium charge at the termination of the contract, calculated upon the basis of the actual payroll expenditure as shown by an audit of the assured's books. Consequently the correct amount of this important factor of experience is not known until after the expiration of the policy. Then again, notices of accident are received throughout the term of the contract and may develop into claims or suits at any time during the first, second or third years following the date of accident. These notices of accident may develop into claim payments, which can be adjusted within a reasonable length of time, or it may be that suits will be brought, the settlements under which may not take place for five, eight or ten years from date of accident. Thus the information in regard to both of the factors by which the results of the business may be judged, *i. e.*, the premiums and the losses, cannot be obtained until years after the contracts have been issued.

To form accurate conclusions from liability experience, it is essential that the results of the business be tabulated in such a way that the losses and loss expense shall be placed against the earned premiums and payroll exposure of the contracts under which such payments have been made. The method employed, called the "Policy Year" method, is to consider all contracts written in a particular calendar year as a group and to allocate to that year all premium payments and loss and loss expense payments whenever made. The tendency of the experience of a company thus recorded, either as a whole or in part, can be studied by succeeding years of business on a basis which is sound.

In this connection it might be well to point out the danger of using calendar year loss ratios in studying the

results of liability business. By a calendar year loss ratio is meant the ratio of the losses and loss expense paid in a particular calendar year to the premiums paid for in that year. The use of such figures is a common practice in casualty underwriting as a rough method of observing the progress of experience. In certain lines of casualty insurance, such as accident and health insurance, where losses are not postponed to any extent, such calendar year records may be used, with certain limitations, to indicate the tendency of experience. A similar record of the results under liability insurance contracts, however, might be entirely misleading for several reasons. For example, a change in the method of claim settlement of a company might result in a large increase or decrease in claim payments during the particular calendar year with consequent effect upon the calendar year loss ratio. Then again, large additional premium payments, mostly earned in the preceding calendar year might increase the premium income to such an extent as to give a low loss ratio for the calendar year which would be misleading and unreliable. In fact, it is in this comparison of averages, and other figures which have not been properly grouped or analyzed to place them upon a safe basis of comparison, that the chief danger in handling liability experience lies.

Compilation of Statistics

In compiling liability statistics the use of a card system for recording information is helpful. The punched card system which has been used for some time by casualty companies and is now being installed by life insurance companies, has not yet been adapted to liability statistical work. So many items of information are required on certain cards that it has not been possible as yet to discontinue the use of the written cards. It is hoped, however, that the punched card system with its

wonderful facilities for sorting and tabulating may soon be applied to this work as it will undoubtedly lessen the clerical labor and the chance of error.

The principal work in the compilation of liability statistics is the preparation of experience, both for use in the periodical preparation of manual or basic rates and for the purpose of indicating tendencies and modifications in the current or "going" liability rates of the company. It is essential that the items of information which go to make up the experience of a liability insurance company be shown in unit form, that is, that each item or group of items of information which will have a direct bearing on the experience shall be entered upon a separate card. The experience in this form is most elastic and permits the making of the necessary subdivisions. For ease in handling and sorting, the cards which contain items which make up the experience of a particular risk are of uniform size. To secure convenience and accuracy, different colored cards are used for the various classes of statistics.

The first step in the compilation is the writing of a registration card which gives all the information which is at hand when the policy is issued, such as the date of issue, the rate of premium, the estimated payroll, the limits of insurance, the term of the policy, etc. As payments chargeable directly to the particular contract, for medical attention, adjusting expense, claims, legal expense, and suit settlements, are made, cards are written and filed together, so that at any time the record of the particular risk is grouped in the experience file.

The second step is to draw off on the summary card, sometimes called the final experience card, all of the information which has been noted upon the cards just mentioned. This card groups the data, first, by the year in which the contract is issued, second, by industrial classification, third, by form of contract, and finally by location. On this card is shown the amount of estimated

payroll, the addition to or the deduction from this amount as a result of the payroll audit, and the resulting actual payroll expended. The totals of losses and loss expense, displayed so as to show the calendar years in which these payments were made, are also given upon this card together with the pure premium, *i. e.*, the pure claim cost per \$100 of payroll expended for this particular subdivision of experience. Upon the completion of this work, which is not taken up until the experience has matured to some extent, the information is drawn from these cards into books made up in loose leaf form which give the experience under industrial classifications for the use of the underwriters.

The steps just outlined cover the experience so far as the actual payments to and by the company are concerned. It is necessary in order that the underwriters' view of the experience may be as clear as possible that the number and estimated cost of outstanding suits be displayed in these experience books. To obtain this information a complete record of suits pending is maintained, subdivided in the same manner as is the information upon the final experience card. Once a year the claim adjuster revises the estimates of the future costs of these suits upon the basis of the latest information obtainable. The underwriter can obtain from these experience books, therefore, information in regard to the progress of the cost of insurance from year to year for certain industrial classifications in particular states.

No use has been made up to this point of information bearing upon the limits of insurance which are payable for injury to one person and for one accident, for the reason that experience in the form just mentioned is used by the underwriters who are familiar with the distribution of the business by limits in various localities and who use this information in order to modify the "going" rates. If an investigation were taken up to establish new

manual or basic rates, the information which has been noted upon the cards bearing upon limits would be utilized.

As an aid to the underwriter, experience is compiled by the individual risk. The statistics are drawn off for this purpose upon a single card—called the history card. This record shows, in addition to such information as the date and term of the policy, payroll, rate, etc., the exact coverage under the contract, the number of notices of accident received, all loss payments, and the number and estimated cost of any suits which may be pending. The underwriter thus has at hand a complete record of the individual risk for reference both during the term of the contract and when the question of the basis of renewal is considered.

Various other cards, such as supplementary notice and suit cards, which give more detailed and complete claim information, must be written to be used in special investigations of these lines of information.

Analysis of Statistics

In order to get the maximum of value from any insurance experience, it must be analyzed thoroughly. This is particularly true of liability experience, for the reason that, because of its deferred character, any figures which may be taken from past records to throw light upon the future course of experience are most valuable. The experience of a liability company should be analyzed to show the results of the business by form of policy and by agency. In order that the trend of experience by the subdivisions may be studied, it is necessary to display the results by "policy years." For instance, the experience under a certain policy form should be made up by succeeding "policy years" and analyzed to show the results of the business written through the various agencies of the company. Another valuable investigation may be

made to show the experience of the business for all policy forms as received from each agency of the company subdivided to show results by years of business.

At this time, when liability companies are operating in states which have recently modified their liability laws to a considerable extent, it is of the utmost importance that the progress of the experience be closely watched in order that indications having a bearing upon the cost of insurance may be obtained as early as possible. Reference may be made here to one of the most helpful investigations of this character—the examination of the claim record of the company. This record should be analyzed to show the rapidity and frequency of suit development, and claim and suit settlement. In connection with this record the trend of the average claim cost, and average suit cost, should be studied. For instance, the notices received in any month or group of months should be traced to the termination of the cases in order to show the change in the rate of development of claims and suits, and the resulting changes in the average cost of settlements.

Reserves

There are two reserves which a liability insurance company is required by law to maintain, namely, the unearned premium reserve, sometimes called “re-insurance reserve,” and a reserve for outstanding and future claims.

UNEARNED PREMIUM RESERVE. This reserve, which is a legal requirement for all branches of casualty insurance, considers as a liability that part of the gross premium of a contract in force at date of valuation, which is unearned. The common method of calculating this reserve is to take 50 per cent. of the gross premiums of contracts having a term of twelve months or less and a pro rata amount of the premium for contracts of longer terms, as, for instance, three-fourths of the premiums of

those contracts having a term of two years and which were written during the year preceding date of valuation, five-sixths of the premiums of three-year contracts which are valued in the first year of the contract, etc. The basis of this method of calculation is the assumption that the premium income of the company is distributed evenly throughout the year and, therefore, that the average duration of all contracts issued within the year and which are in force at date of valuation is six months. A more accurate way of calculating this liability would be to divide the premiums of the contracts in force at date of valuation by months of expiration of contract, and to require as the unearned premium reserve so much of the premium as shall carry the contract to the middle of the month of expiration. The first method can be operated more easily and when the statement of the company is made upon the written basis, the resulting reserve figure will probably approximate closely that obtained by the use of the second method.

It is claimed that there is a considerable equity in the unearned premium reserve of a casualty company. The argument has been advanced that this reserve corresponds to the mean net premium reserve of a life insurance contract upon the one year term plan, and that, therefore, it should be calculated in the same manner, that is, it should be 50 per cent. of that part of the gross premium which is provided for the payment of losses. In the case of a liability insurance company, upon the assumption that 60 per cent. of the gross premium is the provision for losses and loss expense, 30 per cent. of the gross premium would be the unearned premium reserve. It is contended that commissions and the greater part of the management expenses are paid by the company when the policy is paid for, and, therefore, that if this reserve is to be looked upon as the amount necessary to reinsure the business to the termination of the contract, that the

unearned portion of that part of the premium which is the provision for losses, should be a sufficient liability. There are points, however, which must be considered upon the other side of the question, such as the fact that, in the case of a liability company, the advance premium paid in is generally a considerable underestimate of the earned premium. It seems a safe statement to make, however, that there is undoubtedly some equity in the unearned premium reserve, perhaps 10 per cent. of the gross premium.

CLAIM RESERVES. Prior to 1901 there were no state laws bearing upon the subject of claim reserves. In those earlier years of the business in this country each company estimated an amount which it set aside to liquidate future and outstanding claims.

In 1901, Michigan enacted a law which was the first definite method for the calculation of this reserve. This requirement was that companies doing this class of business should set aside at least 40 per cent. of the earned premiums of the business of the five years just preceding date of valuation, less the amount of losses and loss expense paid under the contracts. A provision was made in the law that the commissioner of insurance might increase the reserve resulting from this calculation in his discretion, if the experience of any company seemed to warrant it. This law was later amended to call for not less than 50 per cent. of the earned premiums, and for many years the reserve as calculated by the insurance department of that state furnished a good standard of measurement of this liability.

The weakness in this reserve method, however, was the difficulty of exercising the discretionary power in the hands of the commissioner. It was found that some fixed basis of reserve computation was necessary, and in 1903 New York and Connecticut enacted laws which calculated the reserve upon the basis of average notice and

suit costs. These laws disregarded the probable ultimate loss ratio of the business as a basis of calculation, and fixed the reserve simply upon the claim statistics. Liability experience had shown that practically all of the notices which become claims or suits developed during the eighteen months following the date of accident. An average notice cost obtained from the past experience of the company was consequently applied to the number of notices which had been received during the eighteen months just preceding date of valuation, and from this amount was deducted a sum produced by applying to the number of claims then settled under such notices an average claim cost determined from previous experience. In addition to this amount each suit outstanding at date of valuation where the notice of accident had been received more than eighteen months previous, was reserved for at an average suit cost which had been obtained from past experience. The method of calculation of reserve by both the New York and Connecticut methods were practically the same except that the experience period from which the averages were obtained was in the case of the New York law the first five years of an eight-year period, and for Connecticut the first three years of a five-year period just preceding date of valuation.

This legislation was a step toward adequate reserve for this class of liabilities, but it was soon apparent that the average derived from the experience was too small, as it was impossible to obtain completed experience upon business written only two or three years before date of valuation. The result was that in 1905 the laws of New York and Connecticut were amended and the period of experience from which the average costs were obtained was made in the case of New York, the first five years of a ten-year period, and for Connecticut the first eight years of a ten-year period just preceding date of valua-

tion. The method of calculation, however, remained the same except that the deduction used was the sum of the actual amounts paid instead of that produced by applying to the number of claims settled an average derived from previous experience. In this year also Massachusetts enacted a law similar to that of New York and Illinois, while Texas and California adopted almost the same legal standard, the only change being that these states allowed credit in calculating the reserve for partial payments made on outstanding suits.

Of recent years it has become apparent that these "average" reserve methods were producing figures which were entirely inadequate. The principal reason for this was, that in order to get complete experience for the calculation of average notice costs and average suit costs, it was necessary to use experience of business written from five to ten years earlier. The changes in liability insurance conditions, such as state laws and company methods were so rapid that the results under old experience could not be used as factors in the calculation of the liabilities for new business. Then again, there was no uniformity of method pursued by the companies in the preparation of experience, in returns, in recording claim statistics, in the method of claim settlements, and, finally in the method of reserve calculation. There were also certain technical errors in the method of calculation of averages, for instance, the average suit cost used was based upon all suit settlements regardless of the age of the suit while the suits to which the average was applied in calculating the reserve were all based upon notices more than eighteen months old. As the age of the suit is the principal factor in determining the cost of settlements, this technical error had a large effect upon the amount of reserve.

In May, 1910, a committee of liability insurance under-

writers was appointed to study various methods for the calculation of this reserve, and to recommend a plan which might be used as a model by the states. This committee collected a vast amount of statistics bearing upon the experience of companies and upon the basis of these figures calculated the amount of reserve required by the five or six plans proposed.

A method for calculating this reserve was finally decided upon, and a model bill drafted, which was adopted by the Committee on Reserves Other Than Life, of the National Convention of Insurance Commissioners after conference with the Committee of Liability Insurance Underwriters. This model bill was enacted into law by New York, Connecticut, Massachusetts, Washington Minnesota, Ohio and Georgia, and with certain modifications, by Pennsylvania. This law calls for certain experience statistics from the company upon the basis of which the reserve calculation of the company may be checked. The method of calculating the reserves, briefly stated, is as follows:

For all suits being defended under policies written more than ten years prior to the date of valuation, an estimated cost of settlement of \$1,000 for each suit shall be charged. For all suits being defended under policies more than five years and less than ten years prior to the date of valuation a charge shall be made of \$750 for each suit. As the liability under policies written in the five-year period immediately preceding the date of valuation there shall be charged that percentage of the earned premiums of these years of business which is the loss ratio of the business beginning five years and ending ten years prior to the date of valuation, less the loss payments for these years of business. In no event, however, shall the loss ratio to be used in the valuation as of December 31, 1911, be taken at less than 50 per cent., nor shall the percentage as of December 31,

1912, be taken at less than 51 per cent., and so on—the loss ratio to be taken in the valuation as of December 31, 1916, and in later years shall not be less than 55 per cent. Further check is placed upon the reserve for the first three of the five years of business just preceding date of valuation. If the reserve liability for any one of these years, obtained by multiplying the number of outstanding suits at date of valuation by an estimated cost of \$750 per suit, is more than the reserve for that particular year as obtained by the percentage method just outlined, the larger amount shall be used. In the method of valuation described above liability claims only have been considered. Provision is also made in the law for the valuation of outstanding death and disability claims under workmen's compensation contracts upon the basis of estimates made by the company. If there are outstanding workmen's compensation claims at date of valuation, based upon contracts written in the first three years of the five-year period just preceding the date as of which the statement is made, the estimated cost of these claims shall be used in applying the check to the adequacy of the reserves for these years of business as obtained by the percentage method of calculation.

The above method of valuation applies to companies which have been in business ten years or more. In the case of a company which has been in business less than ten years the same method is followed, with the exception, that in determining the reserve for policies written in the five years immediately preceding the date as of which the statement is made, the minimum percentages mentioned above are used with the suit or claim check.

The suit averages used in the calculation of the reserve were agreed upon after a careful examination of the cost of settlement, by all companies, of suits which corresponded in age to those which were to be valued. The law also provides a definite basis upon which the unallo-

cated loss expense, that is, adjusting and legal expense which cannot be assigned to particular cases, shall be distributed to the various years of business.

The method of reserve valuation outlined above was devised after careful study of the problem, and embodies all of the good features of the several plans proposed. It recognizes in its application that the best measure for that great part of the total reserve item which is based upon the business of most recent years, the experience of which is least developed, is some percentage of the earned premiums which the past experience of the company indicates will be the probable ultimate loss ratio. The more remote the years of business are from date of valuation, the more weight is given to the reserve liability as indicated by claim statistics, until in reserving for the contracts written more than five years prior to the date of valuation the liability of the company is the estimated cost of outstanding cases. Judging from the standpoint of the probable results of liability business now being written, the new method does not apply a standard of measurement which can be called too high or too severe. On the contrary, the tendency seems to be for a greater percentage of the gross premium to be paid out in losses and loss expense. The probability is that any amendment to the law as it now stands will be in the direction of a higher percentage of the earned premium as a basis of the reserve requirement for the recent years of business.

CHAPTER LI
LIABILITY INSURANCE BY THE STATE

By EDSON S. LOTT

SPEAKING broadly, until very recently a workman in this country could obtain damages from his employer for an accidental bodily injury only when he could prove that his employer was at fault for the accident. Hence the term *employers' liability*. Employers, as a rule, protect themselves against this hazard by insuring in stock liability insurance companies.

Many states are now practically throwing aside much of the law of employers' liability and substituting the doctrine of *workmen's compensation*, on the theory that every workman is entitled to compensation for each injury sustained, irrespective of who is at fault for the accident causing the injury.

This doctrine, already firmly established in many European countries, has now a foothold here and is spreading, with a rapidity and intensity characteristic of America, to every state in the Union.

The earlier attempts at this form of legislation in this country failed to pass the test of constitutionality. A few states have succeeded in framing statutes that have survived this test, as far as state courts are concerned. Some of these new laws have been criticized as cumbersome, impracticable and likely to prove so costly to employers as to become a severe burden on industry. Let us assume, however, that laws which are constitutional, practicable and not over-burdensome will be enacted whereby the desired result will be accomplished. Then comes the question:

Is the State the best medium through which workmen's

compensation shall be distributed? Is labor justified in demanding that the State actually dispense the compensation, instead of merely regulating the method of its dispensation? There are, apparently, some who think that the State can successfully compete with private corporations as respects employers' liability and workmen's compensation insurance. These two hazards must continue to be classed together in nearly all states, until their constitutions are changed, no matter how many workmen's compensation laws are passed.

The governor of one of our states, an able political economist, of the academic rather than of the practical type, and the sponsor of a newly enacted labor law which was opposed by some of the employers in that state on the ground that it would increase the cost of employers' liability and workmen's compensation insurance combined, has characterized as "singularly unwise" the action of liability insurance companies in advancing rates on risks in that territory. As a student of all that makes for civilization, his experience, ability and position command serious consideration for any opinion he may express in this connection. This is not saying that his conclusions may not be singularly inexact. In addition to the opinion already quoted, he goes further and observes that it may be necessary for his state to provide a system of state insurance. Let us examine his position.

We may fairly assume that when the new law went into practical operation, *he expected that under it, more injured workmen would receive compensation from their employers than theretofore.*

If this is not so—if this new law—if other laws like them—do not result in greater compensation to injured workmen and their dependents, then they do not accomplish what their sponsors claim for them and the laboring men have been fooled by their friends.

Again, if they do put more money into the pockets of

injured workmen, that money must come out of the pockets of employers. In turn, the latter pass the burden on to the liability insurance companies. The loss accounts of the latter are increased and rates inevitably rise. The operation is automatic.

How did our economist presume the increased cost would be met? Did he expect companies to maintain the old rates, without regard to the difference in loss ratio? We cannot think so. He knew that an increase in rates must be inevitable. What, then, is the basis of his declaration that the increase is an evidence of a lack of wisdom?

Certainly, he cannot have greater knowledge than insurance underwriters themselves as respects what it is likely to cost insurance companies to insure employers against their liability for accidents to workmen. He has no information on this subject which is not readily accessible to every underwriter in the land. It appears, therefore, that in this particular instance he has reached a conclusion on *ex-parte* evidence.

Insurance companies have had nothing to do with the enactment of new workmen's compensation laws. Their duty consists simply in conforming their practice to such laws after they are enacted.

In making calculations to fit these new conditions, liability insurance underwriters have used the data at their command and the knowledge founded on their experience in an endeavor to name premium rates which will prove fair to the insurer and the insured. They are forced to realize that they cannot long charge rates which are either too high or too low: competition will defeat the first; the demands for solvency will prevent the latter.

The laws require stock liability insurance companies to maintain deposits and many kinds of reserves for the protection of policyholders everywhere—deposits as conditions precedent to doing business in some states, re-

serves for unearned premiums, reserves for claims and suits based on notices of accidents, claim (or loss) reserves, the latter difficult to compute and, heretofore, generally inadequate.

It is unnecessary here to recapitulate the many successful efforts made by underwriters and insurance commissioners to ascertain the proper amount of funds to be reserved for claims. Up to within very recent years, all the estimates made have resulted in deficiencies, indicating that the premium rates on which they were based were insufficient. As these facts became apparent from time to time, the fundamental defects were remedied. Finally, some of the state departments ruled on the question, and laws (differing somewhat in detail but all aiming at the preservation of corporate solvency in the interest of the insured) were enacted, entailing another advance in both rates and reserves. A little later a joint committee of state insurance officials and liability insurance underwriters prepared a draft for an entirely new law concerning claim reserves, and the states of New York, Connecticut, Georgia, Massachusetts, Ohio, Minnesota and Washington adopted this law. Now it will be necessary for companies to reserve for claims a greater amount than before. When, in addition, a state very greatly increases the liability of employers for accidents to workmen, then the insurance company manager who does not very greatly increase his premium rates is unworthy of his position.

It must be remembered that losses mature for final payment more slowly in liability than in any other branch of insurance. A workman may sustain an accidental bodily injury which appears to be insignificant, and without inconvenience he keeps at work for the same employer for years, and then is discharged; and *then* the injury becomes serious and *then* (if the statute of limitations will permit) a suit for damages is brought against

the employer. Sometimes an injury does not really amount to anything worth while until the right lawyer gets in touch with the injured person, and then it has a commercial value—and a suit for damages against the employer follows. The person injured may be a minor and no one who is authorized to bring suit considers that the injury lessens in the slightest degree the earning power of the one injured. But when the minor attains legal age, he thinks differently, and sues his old employer for damages. Delayed claims and suits of workmen for damages arising from bodily injuries are a source of great cost to every liability insurance company. The insurance company must keep “in touch” with every accident reported until it is settled or outlawed.

The following cases are cited as illustrative of the grave uncertainties inherent in this form of indemnity:

Gerard B. Allen & Co. were proprietors of a machine shop in St. Louis. In 1872 Patrick Dowling, a boy, was in the employ of the firm. One day, while Dowling was passing from one part to another of the machine shop, his trousers became caught in a revolving set-screw and his leg was drawn into the shafting, causing injuries which resulted in the loss of his leg.

Three years later (1875) Dowling brought suit against his employers, Allen & Co., for damages. At the first trial the court non-suited Dowling.

Dowling's lawyers appealed to the St. Louis Court of Appeals, where the case was ordered to be tried again (6 Mo. App., 195). From this decision Allen & Co. appealed to the Supreme Court of Missouri, but the decision of the St. Louis Court of Appeals was affirmed and the case was ordered to be retried in the Circuit Court of St. Louis (74 Mo., 13).

The case was, therefore, retried in 1882, ten years having passed since the accident happened.

At the second trial Dowling recovered a verdict for

\$10,000, from which an appeal was taken by Allen & Co. to the Supreme Court of Missouri, which ordered another trial (88 Mo., 293.)

The third trial took place in 1886. At this trial Dowling recovered a verdict for \$12,000. Again Allen & Co. appealed. The legal arguments continued until 1890, eighteen years after the accident. This time Dowling was successful in the Appellate Court, and the judgment for \$12,000 and costs, which were very heavy, was affirmed (102 Mo., 213).

The final decision of the court was promulgated in 1890, nearly nineteen years after the accident, and Allen & Co. were obliged to pay a judgment of \$12,000, with interest at six per cent. from 1886, amounting to nearly \$3,000, together with all costs of the three trials in the Circuit Court and the three appeals in the various Appellate Courts, in addition to the fees of their lawyers, of whom two sets had been employed.

Dowling was thirty-six years old, married and the father of three children when he finally received "damages" for the injury and it is safe to say that Allen & Co. spent fully \$5,000 for court costs, printing briefs, transcripts of the testimony, lawyers' fees and other legal expenses, so that their experience with Dowling could not have cost them much, if anything, less than \$20,000.

The testimony regarding the boy's experience, his knowledge of the danger of getting near the set-screw, and the foreman's instructions to Dowling, were conflicting, and the witnesses for Allen & Co., including the foreman and many others, flatly denied Dowling's story, but the jury nevertheless chose to believe him and the result was as above set forth.

Similar instances are not infrequent. It requires no laborious search through the reports of the appellate courts to find them.

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Allen & Co. did not carry liability insurance, but the illustration still holds good, except that perhaps an insurance company would have terminated the litigation earlier—or settled with Dowling without litigation. When an employer is in direct litigation with his workman he is often governed by strong prejudice and passion; that is, he feels keenly a personal injustice. Insurance companies deal with such things impersonally, calmly and dispassionately.

Such cases may fairly be cited as showing that there is need for changing our employers' liability laws to the end that swifter justice may be given to injured workmen; but they also clearly demonstrate the need of much experience and great technical knowledge in fixing in advance adequate premium rates for employers' liability insurance, and the difficulty is certainly not decreased by the enactment of workmen's compensation laws.

Cases such as this also prove that the State cannot go into the business of liability insurance tentatively; that if the State once takes hold of that business it will be practically impossible to let go. The State cannot "try it on to see how it will go." If it puts it on, it cannot easily take it off.

To illustrate still further the deceptive character of liability insurance to the inexperienced or uninformed, and as additional evidence that insurance losses of this character mature slowly, a leaf is taken from the experience of the United States Casualty Company:

During 1901 the United States Casualty Company insured a certain number of policyholders against their liability for damages arising from accidents. The policies ran for one year. The total premiums represented a certain amount. The company paid out for claims under those policies during that same year (1901) 11.07 per cent. of the total premiums received. That is, at the end of the year the company had on hand 88.93 per cent.

(less expenses of administration) of the total premiums received.

This, considering only the losses paid the first year, would probably have looked like a highly profitable business to the advocate of lower premium rates. But wait:

During the next year (1902) the company paid out an additional 25.97 per cent. of those 1901 premiums under those 1901 policies, for claims arising from accidents happening while those same policies were in force. During the next year (1903) the company paid out an additional 12.67 per cent. of those 1901 premiums under those 1901 policies, for claims arising from accidents happening while those same policies were in force. During 1904, 7.96 per cent. was added to the loss ratio in the same way. During 1905, 2.56 per cent. was added to the loss ratio in the same way. All this converted a loss ratio of 11.07 per cent. at the end of the first year (100 per cent. received in premiums and 11.07 per cent. paid in losses) into a 60.23 per cent. loss ratio at the end of the fifth year (100 per cent. received in premiums and 60.23 per cent. paid in losses) and the United States Casualty Company is still paying claims under those 1901 policies.

There is nothing unusual about the above illustration. One of the smaller casualty insurance companies had a loss ratio at the end of 1899 of 11.32 per cent. on its 1899 premiums for liability insurance; its loss ratio on those 1899 premiums had climbed to 77.34 per cent. at the end of the fifth year, and it is still paying losses on those same premiums. Its 1900 premiums began with a loss ratio of 13.50 per cent. the first year, reached 73.08 at the end of the fifth year, and not all the claims against those 1900 premiums have yet been settled.

A large foreign casualty insurance company (doing business in this country), began the year 1901 with a loss ratio of 7.38 per cent. on that year's premiums, had paid out for losses at the end of the fifth year 70.03 per

cent. of its 1901 premium income, and is still paying losses on that year's premiums.

One of the oldest and largest American casualty insurance companies paid out for claims during 1901, on account of the liability policies it issued that year, 6.83 per cent of its total premiums for those policies. It kept on paying claims under those same policies until at the end of the fifth year it had paid out for claims 61.02 per cent. and it is still paying claims arising under those same policies.

Here is one company's record at the end of such five-year period for five such periods.

1897-1902.....	64.72 per cent.
1898-1903.....	55.77 per cent.
1899-1904.....	82.33 per cent.
1900-1905.....	50.51 per cent.
1901-1906.....	59.60 per cent.

Turning our attention to the alternative offered by the statesman quoted: Suppose the State does go into the business of liability insurance. Let us cross-examine the sponsor for state insurance for the light it will yield us:

Who will run the state company (or department)? Will all stock companies be driven out and the State be given a monopoly? Or will the State merely become a competitor of the stock companies? In either event, who will fix the premium rates to be charged by the State, and what will be the basis of calculation? How will the state department or bureau determine the amount to be paid to each particular injured employee? Who will have the last say? Will state adjusters have power to "compromise" claims, or must each go through the courts, to eliminate frauds? Is there any method (whether under a workmen's compensation law or otherwise) whereby a definite sum can be fixed for every conceivable injury? If all the premiums received by the State are not

sufficient to pay all the losses, who will pay the difference? The taxpayers at large, irrespective of whether or not any particular taxpayer is insured? Would this be just to the taxpayers? If all the premiums received by the State are not sufficient to pay all the losses, will the employers who are insured be assessed from time to time for more premiums? If so, what about the employer who pays an initial premium and then goes out of business, becomes insolvent or dies—who makes up for him?

What advantage has the State over a private corporation as respects management expenses, unless it be in the saving of agents' commissions? Conceding that the State can do away with agents' commissions, will it not cost just as much to send competent men to employers to arrange for the insurance?

The stock company underwriter has authority to adjust everything to fit the needs of each insured. How would the State arrange this?

And who will audit for the State the payrolls of the assured? And who will settle disputes over the correctness of the audits?

When the State has fixed its premium rates, how will it know whether they are adequate until *all* the claims for accidents happening while the insurance was in force have been settled or outlawed?

And will the actuaries, underwriters, claim adjusters and clerical force all change every time the State changes its politics? Will a big employer of labor, with a big political following, be permitted to name one of the underwriters, and will such underwriter feel under obligation to name a low rate to such employer?

Will the State be able to get as competent managers and employes as the insurance companies?

Aside from agents' commissions, is it reasonable to suppose that the State can conduct the business as economically and as efficiently as insurance companies? And

will salaried state inspectors and see the state a premium than company commission agents.

When an employer insures against accidents to his employees, he usually also insures against accidents to other persons—the public. The owner of an establishment may be liable for damages to any person, whether an employee or not, who sustains a bodily injury or of about his premises. The prudent owner takes out both liability insurance as well as employees' liability insurance. Both hazards are often covered in one policy. The two hazards are closely interwoven. Will the average insured split his insurance, giving one piece to the State and the other piece to a stock company?

Many contractors carry on operations in two or more states. Many manufacturers send their products all over the country and send their own men along to install them. If such contractors and manufacturers were insured by the State, of what value would the insurance be when the insured were operating outside of the state?

If the state company were given a monopoly of the business in its own state, would it insure a contract of another state while carrying on operations in its state?

Self-interest is a tremendous motive in connection with the discharge of any duty. Would not the proper kind of self-interest be entirely absent in the work of the governmental officials who would be selected for duties of this nature? Its presence in the servants of stock companies is plainly apparent. State company officials will be selected by politicians and will themselves be politicians. They can hardly be expected not to embrace the opportunity to become personally popular through liberal expenditures. They will have no personal interest in preventing payments to unreasonable and fraudulent claimants.

Stock company officials are selected, retained and promoted on their merits.

Finally, I do not believe that any state can obtain the services of the army of competent men required to conduct successfully a large liability insurance company. Those having the necessary technical and practical knowledge would not accept a state position—they would leave such insecure positions for the politicians and their followers.

I would suggest to the governor who thinks the stock companies unwise in the efforts they are making to protect their funds against dissipation due to one of his statutory theories that, instead of encumbering the governmental machinery of his commonwealth with a paternal scheme, he adopt a simpler method. If he really believes that the company rates are unreasonably high and productive of inordinate profits, he can defeat the effort and secure speedier relief by enlisting the assistance of his monied friends in organizing a company of their own. Such an enterprise could be put under way in a few weeks. It requires nothing except money to *start*. All legal requirements are met by sufficient capital.

The very best argument against state liability insurance after all is to be found in the experience of those who have tried it. For twenty years Dr. Ferdinand Friedensburg was officially connected with and for several years President of the Senate of the Imperial Insurance Office of the German Empire.

Dr. Friedensburg has issued a pamphlet calling attention to the abuses of German state employers' liability insurance as it has worked out in practice. He does not condemn the underlying principles of workmen's compensation for accidents, but he says that charity crept in and corrupted the system at the beginning; that "workmen very soon got accustomed to bringing their complaints, doubts, and claims of all natures whatsoever to the Imperial Insurance Office, often without appealing to any intermediate instance"; that the Imperial Insur-

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ance Office, which is intended to handle questions of law is overburdened with business and administrative matters that "the expenses of the system continued to grow as the force required increased". That "the number of officials in the Imperial Insurance Office has multiplied in tune with the ever-growing volume of work" that " . . . the number of accidents grows with remarkable speed"; that "in 1906, 190,132 accidents were reported and 10,540 (10 per cent.) compensated. In 1908, 221,377 accidents were reported and 14,965 (6.7 per cent.) compensated"; that "often an accident is sought for and arranged"; that sometimes a chronically sick man swears that his old illness is the result of a recent accident and gets consequential help; that "the insurance chiefs act entirely under the belief that they ought to help their local residents, . . . as a result of the common opinion that the insurance funds have more money than they know what to do with, and this idea strikingly deadens the conception of legality and love for the truth"; that "naturally the universal policy, the payment of unjustified claims, and the extravagance practiced in equipping hospitals and sanatoria impair the integrity of the insurance funds"; that "employers do all that is possible to escape their burdens, which they feel to be unjust, and in vain enormous sums are annually exacted from them in fines"; that " . . . industrial unions and insurance institutions . . . have been repeatedly on the brink of bankruptcy."

Dr. Friedensburg points out that the excessive cost of the insurance system, which is one result of the degradation of the system into charity, is complained of by employers, and that state insurance, therefore, reacts injuriously upon Germany's industry.

He says: "As a result of the cost of insurance, which has gradually become monstrous, . . . German industry

is put at a disadvantage and is hampered to the extreme in its competition with foreigners."

Indeed, Dr. Friedensburg makes the astounding statement that the German system of workmen's compensation is held responsible for the marked rise in prices which is felt to be oppressive by all classes of the German population.

Liability insurance companies in this country now have the necessary organizations to care properly, on behalf of employers and others, for claims for damages and compensation arising from accidental bodily injuries.

The clumsy, unwieldy, red-tape, extravagant, and politically-changing State certainly is not now and presumably never will be properly equipped to do this work satisfactorily.

This nation of ours is divided into half a hundred sovereign states, each with power to make laws to govern all the liability insurance companies now doing business as well as those companies which may hereafter enter the field. This power, properly exercised, ought to prove more effective than state insurance, subject, as that must be, to political influence and the fluctuating fortunes of political parties. Liability insurance is a science. The practice thereof does not easily lend itself to the ordinary abilities of the ward politician and the party boss. As things now are, state governments are dominated by men who have had no experience whatsoever in this complicated business. An experience with state insurance under such conditions cannot fail to prove expensive to the people generally even though a few persons may be unduly benefited.

WORKMEN'S COMPENSATION

BY STANLEY L. OTIS

THE principle of workmen's compensation is based on the theory that a workman injured in the course of his employment is entitled to some remuneration for his physical suffering and financial loss without regard to fault. This is in contradistinction to the system of employers' liability which is based upon the negligence (or fault) of the employer.

Under this scheme of compensation for work-accidents, the doctrines of contributory negligence, assumption of risk, and fellow servant rule have no place. Immediately an industrial worker becomes incapacitated through injury received in the line of his duty or the course of his employment, a certain compensation provided by law is assured him; the only exception being when the injury is caused by the serious and wilful misconduct of the workman. In such cases the compensation is usually disallowed unless the injury results in death or serious and permanent disablement.

To Germany belongs the credit of first introducing the system of workmen's compensation. It was brought about primarily by the vast changes which had taken place in industrial conditions, especially the growth and development of the factory system. These changed relations between the employer and workman fostered and aided the socialistic movement, particularly among the working classes. To check and discourage socialism, Emperor William I, at the suggestion of Bismarck, sent his famous message to the Reichstag of November 17, 1881, which reads in part:

“ Already in February of this year we have expressed our conviction that the cure for social ills is to be sought not exclusively in the repression of social democratic excesses, but likewise in the positive promotion of the laborers’ welfare. We consider it our imperial duty warmly to recommend these tasks again to the Reichstag, and we should look back with greater satisfaction on all successes with which God has visibly blessed our government if we could once take with us the consciousness of leaving behind us to the Fatherland new and lasting pledges of its internal peace, and to the needy, greater certainty and abundance of the assistance to which they have claim. In our endeavors directed to this point we are sure of the agreement of all allied governments, and, we trust, in the support of the Reichstag without difference of party position.

“ With this intention the draught of an act upon the insurance of workmen against accidents in factories, laid before the allied governments in the previous session, will be subject to a change, with regard to the negotiations in the Reichstag upon the same, in order to prepare for renewed deliberation upon it. A supplementary bill will be issued for the uniform organization of the industrial sick associations. But those also who are disabled from work by age or invalidity have a well grounded claim to greater care from the state than has hitherto been their share.

“ To find the proper means for such care is a difficult but also one of the highest tasks of every community which rests upon the moral foundations of a common Christian life. A stronger reliance on the natural strength of this social life and spirit and their organization in the form of corporate societies under the protection and favor of the state, will we hope furnish the solution of other problems for which the force of the state alone would not in the same degree suffice.”

The result was the passage first of a sickness insurance bill providing for accidents during the first thirteen

weeks of disability, and second, a compulsory accident insurance bill providing for mutual associations of employers including all the establishments in one branch of industry or group of industries. The sickness insurance bill was passed June 15, 1883, and became effective December 1, 1884. The compulsory accident insurance bill was passed July 6, 1884, and became effective October 1, 1885. In the beginning the compulsory insurance law applied only to the more hazardous industries, but was rapidly extended to cover other and less dangerous trades, until today practically every workman is covered under the law. In 1900 a general revision of the law was made and the various industries are now separated into the divisions, (a) general industries, (b) building trades, (c) navigation, (d) agriculture. Each division has its own type of organization and administration. These divisions embrace sixty-six industrial associations and forty-eight associations for agriculture.

Immediately an employer begins the manufacture of goods or commences other work, he becomes by law a member of one of these associations and liable for all its past indebtedness as well as its current losses. The unpaid and maturing losses of other employers who have failed or retired from business are assumed by the remaining members and all assessments are collectible if need be by the government the same as taxes.

No compensation to the workman injured in the course of his employment is paid for the first thirteen weeks by these mutual associations of employers. During that period payments are provided for by the sickness insurance organizations. After thirteen weeks known as "waiting time" the compensation paid by the mutual employers associations is as follows: Compensation for death, (a) funeral benefits of one-fifteenth of annual wages of deceased but not less than \$11.90; (b) pensions

to dependent heirs not exceeding 60 per cent. of annual wages of the deceased; (c) if the annual wages exceed \$357, only one-third of excess is considered in computing pensions. Compensation for disability: (a) free medical and surgical treatment after thirteen weeks; (b) after thirteen weeks 66 2/3 per cent. of annual wages; (c) for complete helplessness necessitating attendance, payments may be increased to 100 per cent. of annual wages; (d) for partial disability a corresponding reduction in payments; (e) if annual wages exceed \$357, only one-third of excess is considered in computing pensions.

The money to meet these payments is advanced by the government and at the end of the year the associations apportion the cost of repaying same among their members.

The government furnishes without charge the services of the post office and of certain supervisory officials, and defrays the expenses of litigation due to the many appeals taken to the higher courts and the Imperial Insurance Office.

For determining the premiums due from employers the plan followed is the assessment one; only the money needed to make the immediate payments being collected—except a sum fixed by the government for the purpose of creating a contingency reserve. The rates are not sufficient to enable the present value of the money needed to make the future payments to be set aside as a reserve. There is, therefore, a constantly increasing cost to employers and will be for some years before stability of payment is reached.

In Great Britain, as was the case in Germany, employers' liability laws preceded workmen's compensation acts, only in Great Britain the adoption of the principle of workmen's compensation did not come until a later date.

The first British workmen's compensation act was passed in 1897 and covered employment in factories and dangerous trades. Speaking in the House of Lords on the 20th of July, 1897, Lord Salisbury said:

“ To my mind the great attraction of this bill is that I believe it will turn out a great machinery for the saving of life. This is the real history of this law of compensation. The law of compensation at the beginning of the century was taken up by the juries, and instead of compensation for the real injury incurred being given, it was used by them as a punitive instrument to force these great owners and railway companies to strain their efforts to the utmost in avoiding and preventing the accidents, which at one time were so numerous. It has been very successful as far as regards the ordinary passenger or ordinary citizen, but the law of common employment has damaged its efficacy as regards the workingman. We are now by wise and general revision of the principle on which the law rests applying it for the purpose for which it was originally destined, and for which it has been conveniently and most profitably employed, the purpose of forcing all who, by the process of industry or the accident of their position, have the lives of their fellow men in their power,—forcing them to spare neither labor nor ingenuity nor money in making our industries as safe as possible to those by whom they are carried on.”

The act was amended in 1900 and a new act known as the Workmen's Compensation Act of 1906 was passed December 21, 1906, and became effective July 1, 1907.

Under this act practically all occupations are covered including domestic servants and farm laborers. The act also covers certain occupational diseases, and retains the common law liability of the employer as well as that imposed on him by the employers' liability act of 1880.

Compensation is paid beginning with the first week except if the incapacity last less than two weeks no payment is required for the first week. The scale of com-

pensation is as follows: Compensation for death, (a) a sum equal to three years' wages, but not less than \$729.98 nor more than \$1,459.95, to those entirely dependent on earnings of deceased; (b) to those partially dependent, a sum less than above amount as determined; (c) if no dependents, reasonable expenses of medical attendance and burial not exceeding \$48.67. Compensation for disability: (a) a weekly payment during incapacity of 50 per cent. of weekly wages not exceeding \$4.87 per week; (b) a weekly payment during partial disability not exceeding the difference between employee's wages before injury and wages after injury.

In Great Britain insurance is voluntary and the employer may insure his liability in a stock company, mutual employers' association, or under certain conditions in one of the friendly societies.

The insurance is largely placed with the stock companies whose initial rates in many instances proved inadequate for the safe conduct of the business. It therefore became necessary to largely increase the rates first put out for this form of insurance. The present rates are not sufficient to save the insurance companies from loss.

The insurance companies are required to deposit statements with the Board of Trade showing the estimated liability in respect of claims outstanding at the end of the year of account for the preceding four years. Their outstanding claims of five years duration and upward to be computed on the basis of 75 per cent. of the value of a life annuity purchased from the government. Thus the premium collected in the first instance must include a sum to be set aside as a reserve to meet the future losses.

Austria was the second country to adopt the principle of workmen's compensation—a compulsory accident insurance law being passed December 28, 1887, effective November 1, 1889. This law was revised in 1894 and

today a very large proportion of the workmen are covered excepting employees in agriculture and forestry where machinery is not used.

The employers are required to insure in district organizations supervised by the government. There are seven of these territorial organizations and all employers whose plants are located within a given district must insure in the mutual employers association of that district irrespective of the character of the industry. These district organizations being under the supervision of the state, the state in a measure guarantees the solvency of these associations.

In the beginning the attempt was made to have the rates for insurance sufficient to provide funds not only to pay the current losses but to set aside a reserve to meet the future losses; but in order to make the scheme attractive to the employers, the premiums were pitched so low that today these mutual employers' associations are impaired to the extent of about \$14,000,000, and they demand that the Austrian government assume the deficit.

France adopted a workmen's compensation law in 1898 which has been amended since and now nearly all workmen come under the operation of the law. The insurance is voluntary and is largely in the hands of the stock companies. There is a state insurance department but as insurance is not obligatory, the state transacts only about 1 per cent of the business. This is in a measure due to the fact that the state is not permitted to cover temporary disabilities. It must also accept all who apply for insurance. The selection of risks is, therefore, against the state.

Norway early adopted the principle of workmen's compensation. The insurance is compulsory and is assumed by the Royal Insurance Institution established for the purpose and guaranteed by the state. Thus Norway has a system of pure state insurance. Realizing that it is

not only necessary to collect sufficient premiums to pay the current losses but to meet the future payments as well, the aim has been to fix the rates of premium high enough to accomplish this purpose. The attempt has only been fairly successful. A deficit of over \$125,000 was assumed by the state and it is a question whether the present reserve fund is sufficient to provide for the payments maturing in the future. The administration expenses are paid by the state and in various ways the state is charged with the duty of assisting in carrying out the provisions of the law.

While state insurance may prove satisfactory under a monarchical form of government, it is extremely doubtful if it would be a success where a democratic form of government prevails and with conditions as they exist in the United States. Anything savoring of paternalism is contrary to free institutions.

Italy, Hungary and Holland have all adopted the principle of workmen's compensation and in each of these countries insurance is compulsory. Russia, Spain, Belgium, Denmark and Sweden have all adopted the principle as have several of the colonies of the British Empire, but with each of them the insurance is voluntary.

The United States has been one of the last countries to substitute the principle of workmen's compensation for employers' liability. President Roosevelt attracted the attention of the country to its great importance in his special message to Congress, January 31, 1908. He said in part:

“ I also very urgently advise that a comprehensive act be passed providing for compensation by the government to all employees injured in the government service. Under the present law an injured workman in the employment of the government has no remedy and the entire burden of the accident falls on the helpless man, his wife, and his young children. This is an outrage. It is a matter of humiliation to the nation that there should not be

on our statute books provision to meet and partially to atone for cruel misfortune when it comes upon a man through no fault of his own while faithfully serving the public. In no other prominent industrial country in the world could such gross injustice occur; for almost all civilized nations have enacted legislation embodying the complete recognition of the principle which places the entire trade risk for industrial accidents (excluding, of course, accidents due to wilful misconduct by the employe) on the industry as represented by the employer, which in this case is the government.

“ The same broad principle which should apply to the government should ultimately be made applicable to all private employers. Where the nation has the power it should enact laws to this effect. Where the states alone have the power they should enact the laws.”

The Federal Government passed an employers' liability law relating to interstate commerce carriers April 22, 1908, and the same year enacted a workmen's compensation law applicable to artisans and workmen employed by the United States. On the recommendation of the congressional Employers' Liability and Workmen's Compensation Commission, a workmen's compensation bill providing an exclusive remedy and compensation for accidental injuries resulting in disability or death to employees of common carriers by railroads engaged in interstate or foreign commerce was introduced in Congress, February 20th, 1912.

The bill provides for medical and surgical aid, including hospital charges during the first two weeks unlimited as to amount and continuing thereafter in an amount not exceeding two hundred dollars. For compensation commencing at the end of the second week; in case of death, a maximum of 50 per cent. of monthly wages extending over a period of eight years; for permanent total disability, 50 per cent. of monthly wages for the remainder of life; for temporary total disability, 50 per

cent. of monthly wages during its continuance; for permanent partial disability, 50 per cent. of monthly wages for a period ranging from four months for loss of a toe to six years for loss of one arm or loss of hearing in both ears; for temporary partial disability if the injured employee is unable to secure work, 50 per cent. of wages during the continuance of such disability; if able to work at reduced wages which fall below 90 per cent. of his wages before the accident, the difference between said 90 per cent. and such wages, not exceeding 50 per cent. of his wages at the time of the accident.

The periodical payments are limited to a maximum of \$50 per month and minimum of \$25, except if the employees' wages are less than \$25 per month payment for the first twenty-four months shall not exceed the monthly wages. Provision is made for commuting the future payment after six months to a lump sum.

No compensation is paid where the injury or death is caused by the wilful misconduct of the employee or if the same resulted from his intoxication while on duty. Compensation for occupational diseases is expressly excluded.

The amount of compensation may be fixed by agreement between the employer and employee; by an award by a committee chosen by both parties; or by the findings of an adjuster of accident compensation appointed by the United States district court subject to review by the district court with an appeal to the circuit court of appeals and to the Supreme Court of the United States. The salaries of the adjusters, their expenses, and the fees of the examining physicians appointed by them are paid by the Federal Government, as are also other administration expenses.

The burden of compensation is considered as an element of the cost of transportation and shall be recognized in any proceeding affecting rates. The bill is very likely to become a law, and if so will have an important

bearing on the future of workmen's compensation legislation in this country.

The State of New York passed the first comprehensive workmen's compensation law in the United States in 1910. The law applied to workmen engaged in manual or mechanical labor in certain hazardous trades and the basis of liability was the trade risk of accident. The scale of compensation was as follows: Compensation for death: (a) if the workman leave a widow or next of kin wholly dependent on his earnings—approximately four years' wages, but in no event more than \$3,000; (b) if such widow or next of kin be only partly dependent, a proportionate sum not exceeding above as may be determined according to the financial injury to such dependents; (c) if no dependents, the reasonable expenses of his medical attendance and burial not exceeding \$100. Compensation for disability: (a) one-half weekly wages after two weeks not exceeding \$10 per week, payments to continue during incapacity, but not more than eight years.

This law became effective September 1, 1910, and was declared unconstitutional by the Court of Appeals of the State of New York March 24, 1911, on the ground that it deprived the employer of his property without "due process of law" and thus violated Article 1, Section 6 of the New York State Constitution which reads in part:

Article 1, Section 6. "... no person shall . . . be deprived of life, liberty or property without due process of law; nor shall private property be taken for public use without just compensation."

In the argument by the defendant the legislation was challenged as void under the fourteenth amendment to the Federal Constitution and the Court plainly intimated its belief that such was the case.

This decision undoubtedly affected adversely the movement for the substitution of workmen's compensation for

employer's liability, but while it retards the acceptance of the principle of compensation to the injured workman, irrespective of fault, its effect will be only temporary. In the final analysis a workmen's compensation law is simply a rule of justice between employer and workman and a much more just rule than an employers' liability law.

Two methods were suggested to remedy the situation created by this decision:

First, to draft a mixed negligence and elective compensation law providing that if the employer elect to accept the liability for compensation, then in cases where the employee does not elect to come under the compensation provisions the three broad defenses of the common law are available as a defense. If, however, the employer does not so elect these three defenses shall not be available in an action to recover damages by an employee entitled to come under the provisions of the law as to compensation. While such a law could not be termed a compulsory compensation law, as was the act declared void under the constitution of New York, its effect would be to bring pressure to bear on employer and employee to accept the elective compensation.

Second, to amend the State Constitution. The court in its decision indicated this remedy and it may be necessary to amend the due process of law clause of the Bill of Rights in order for the state to adopt a satisfactory workmen's compensation act.

This second method was favored by the New York State Employers' Liability Commission and at the 1912 session of the legislature of that state there was proposed and passed a constitutional amendment. Upon the re-passage of this amendment by a session of a subsequent legislature, it can then be submitted to a vote of the people for ratification.

The year 1911 witnessed the introduction in many of the state legislatures of a great number and variety of workmen's compensation bills, and workmen's compensation laws were passed in ten states.

New Jersey passed a workmen's compensation law which provides that a contract shall be presumed between each employer and each employee to substitute the liability for compensation in place of the liability for negligence, unless a written contract to the contrary be made. This law became effective July 4, 1911, and has been declared constitutional by the lower court. An appeal has been taken from this decision.

Kansas adopted a mixed negligence and elective compensation law along the lines previously described.

California, Illinois, Nevada, New Hampshire, Ohio, Washington and Wisconsin have adopted workmen's compensation laws. The California and Wisconsin laws are quite similar; but the laws of the other states named differ widely one from the other and are more or less complex. A proposed constitutional amendment was adopted by the legislature of California March 28, 1911, providing for compulsory workmen's compensation. This amendment was submitted to the vote of the people in October, 1911, and carried by a large majority.

The laws of Ohio and Washington introduce the principle of state insurance and for that reason their operation will be watched with close interest. Operating within a limited area where risks of a similar hazard are few and the total exposure far too small to permit the working of the law of average, there is grave doubt that the resulting rate will be a fair one. Administered by those more or less unfamiliar with the principles of insurance; with political affiliations rather than real merit the test of service; lacking the motive of self-interest of the private companies, the necessity for economical

management, the knowledge to differentiate between the good and the bad risks of a given class, the inducement to approve only those claims which are just and to reject all which savor of malingering and simulation, the feasibility and practicability of state insurance is open to serious question.

The supreme courts of the states of Ohio, Washington and Wisconsin have upheld the constitutionality of the workmen's compensation laws.

Massachusetts passed a workmen's compensation act approved by the Governor July 28, 1911, which abrogates the rules of law as to contributory negligence, negligence of fellow employees, and assumption of risk in actions to recover damages for personal injuries sustained by employees except domestic servants and farm laborers. If, however, the employer be a subscriber to the Massachusetts Employees' Insurance Association created by the act, the provisions abrogating these defenses do not apply. A policyholder of any liability insurance company authorized to do business within the commonwealth is regarded as a subscriber. The employer thus has the choice of becoming a member of the association or insuring in an authorized liability company in order to qualify as a subscriber under the act. If the employer elect to become a subscriber he comes under the provisions of the act as to compensation. An employee of a subscriber shall be deemed to have waived his right of action at common law if he shall not have given his employer notice in writing that he claimed such right at the time of his contract of hire. Action on the part of both employer and employee is thus voluntary and in the opinion of the Justices of the Supreme Court of Massachusetts, the act is in conformity with the provisions of the constitution of the commonwealth which requires that property shall not be taken without due process of law,

and in conformity with the fourteenth amendment to the Federal Constitution.

The scale of compensation provides: 1. For death, (a) wholly dependent, approximately three years' wages but not less than \$1,200 nor more than \$3,000, payable in weekly installments covering a period of 300 weeks; (b) partially dependent, the payments stated above to be proportionately reduced; (c) no dependents, reasonable expenses of sickness and burial not exceeding \$200. 2. For total incapacity, one-half weekly wages with a maximum payment of \$10 per week and a minimum of \$4 during such incapacity, but not exceeding 500 weeks with total payments limited to \$3,000. 3. For partial incapacity, a weekly compensation equal to one-half the difference between the employee's average weekly wages before the injury and the average weekly wages which he is able to earn thereafter, but not more than \$10 per week and payments limited to 300 weeks.

No compensation is paid for the first two weeks but during these weeks reasonable medical and hospital services and medicines shall be furnished when needed. In case of certain specified injuries additional compensation is provided ranging from one-half weekly wages for twelve weeks for loss of phalange of finger, thumb or toe to one-half weekly wages for 100 weeks for loss of two limbs or both eyes. If the employee be injured by reason of his serious and wilful misconduct, no compensation is paid, but if by reason of the serious and wilful misconduct of a subscriber or his representative the compensation is doubled.

The act provides for the establishment of an industrial accident board of three members empowered to make rules for carrying out its provisions and exercising certain judicial functions. The act becomes effective July 1, 1912.

Few of the states held legislative sessions in 1912 and

therefore little Workmen's Compensation Legislation was enacted. Bills were introduced in Kentucky which failed of passage and laws were adopted in Maryland and Rhode Island. The workmen's compensation law in Rhode Island becomes effective October 1, 1912.

The Michigan legislature, convening in special session, passed a workmen's compensation bill similar to the New Jersey Act, although in some respects more favorable to the workman. The bill, approved by the Governor, becomes effective September 1, 1912.

The American and foreign stock insurance companies now transacting employers' liability insurance in the United States have undertaken to relieve the employers in those states adopting workmen's compensation of this additional liability. The rates are based on experience under insurance of a similar character and on other data available. These rates may possibly prove sufficient to insure proper and efficient service to the assured and his indemnification against losses which will mature in future years. More likely, however, they will be subject to alteration.

Under a new liability loss reserve law which applies to claims under workmen's compensation, adopted by several of the states, the companies are required to maintain very stringent reserves for their outstanding claims and suits. The premium charged the employer must include the amount necessary to be set aside as a reserve.

The operation of the principle of workmen's compensation has resulted in proving its superiority over employers' liability from several standpoints.

FIRST. The prevention of accidents. Ignorance of the machinery which they operate, carelessness and recklessness in its operation, stand out in any study of the causes of accidents. Personal equipment of the workman for the task he performs is oftentimes overlooked and from

loose, torn and unsuitable clothing accidents result. Insufficient lighting and crowding of machinery contribute their quota to which must be added defective machinery and lack of the use of proper safeguards.

Under the system of employers' liability in force in practically all countries previous to the introduction of workmen's compensation, it was the negligence of the employer that determined the right to recovery of damages or compensation. This negligence had to be clearly shown and while the more humane employers expended thought and money for the prevention of accidents, the vast majority were content to make only slight effort to minimize the number of accidents. With nearly every accident entitled to compensation, the question of the number of accidents and their severity became of financial importance and vast strides have been made in the methods and means used to prevent accidents particularly in Germany. The result has been a lessened number of killed and maimed workmen and a lowered cost for insurance.

SECOND. Elimination of waste. The system of employers' liability is wasteful—necessarily so. It is not always easy to determine whether an employer has been negligent or not. With an automatic scale of compensation operative on the occurrence of an accident, a large portion of the expenses of investigation, lawyers' fees and court costs are eliminated. The saving is an important one.

THIRD. Immediate payment to the injured workman or his family. Under employers' liability a considerable period usually elapses before payment is made, and sometimes it is years before settlement is reached. Workmen's compensation laws provide for weekly payments or lump sum settlements. The money is thus available at the time when most needed—a blessing to the injured workman or in case of his death, the widow and children.

FOURTH. Diminishment of friction between employers and workmen. The operation of employers' liability laws tends to develop friction and oftentimes antagonism between employers and workmen. The injustice the plan works in the distribution of compensation for accidental injuries, and the fact that the workman must prove his case before payment is made, is one more cause preventing harmonious relations between employer and employee. Workmen's compensation with its prompt settlements largely remedies this evil.

FIFTH. Equitable method of determining compensation. One of the characteristics of workmen's compensation laws is the method of determining the compensation. A study of the scale of compensation shows (a) the compensation is made to depend upon and vary with the wages; (b) it is made to depend upon and vary with the extent of the injury.

Under employers' liability laws the damages or compensation assessed by one jury for loss of eye or limb may and does differ radically from the sum assessed by another jury for identically the same injury. Workmen's compensation laws substitute a fixed known compensation for an unknown variable compensation.

SIXTH. The workman receives full compensation awarded him. Under employers' liability there has grown up a class of lawyers known as "Ambulance Chasers," who take advantage of the unfortunate workman's necessity and often receive exorbitant payment for any real or alleged services rendered. With the fixed compensation payable at stated intervals provided under workmen's compensation laws the workman receives the full amount due him.

SEVENTH. The cost to employer a part of cost of production. Under a workmen's compensation system nearly all accidents carry compensation, nearly all employers insure their liability, and the payments to the injured

workman are with a certain degree of definiteness stated in the law. Therefore, the speculative feature is largely eliminated, the soliciting expense is lessened, and the determination of rates more scientific and accurate. The cost to the employer becomes a fixed charge upon the industry, it enters into the cost of the commodity as one of the items of production, and in the last analysis the burden is transferred to the consumer.

The evolution of compensation to workmen injured in the service of the employer has been slow; every advance being met with opposition. In the beginning a small payment limited to the master's own negligence, next the broader principle of the employers' negligence, later with the three defenses greatly curtailed or partially abrogated, and finally compensation without regard to fault.

The introduction of power machinery and the factory system supplied the impetus which developed the principle of compensation for work accidents most rapidly. The great progress made in the theory of compensation for all accidental injuries to the workman unless wilfully inflicted is predicated upon the unprecedented development of industrial conditions in all civilized countries during the last fifty years.

It has been found by careful study and observation that practically all modern industries are subject to accidents causing injury and death to the workman; that the number of accidents in any given industry over a series of years is more or less stable; that the degree of accidental injury in any one group of industries remains fairly constant; that accidents are governed by the law of probability; and that they are to a certain degree inevitable.

The fact being established that there is a certain accident risk attaching to industrial employments—principles of justice and humanity demand that the loss shall in no event fall wholly on the workman. Statistics show that a large percentage of accidents are not due to the

negligence or fault of the employer, or of the employee, but are due to inevitable accidents connected with employment. The following table taken from the official reports of Germany sums up the results of an inquiry as to question of fault of 81,248 accidents compensated for the first time in 1907:

ACCIDENTS DUE TO	PER CENT
1. Fault of employer.....	12.06
2. Fault of the workman.....	41.26
3. Fault of both employer and workman.....	.91
4. Fault of fellow workman or third party.....	5.94
5. General hazard of the industry.....	37.65
6. Other causes (chance, act of God, etc.).....	2.18

Under employers' liability laws, the greatest possible percentage of accidents for which damages could be obtained would be 18.91, while probably less than that percentage would be chargeable for damages.

For the purpose of rendering some reasonable compensation on account of the 80 per cent. or more of accidents occurring in industrial establishments not provided for under employers' liability, the principle of workmen's compensation is urged as a substitute.

The withholding of compensation for this large percentage of accidents results in a lowered standard of living for the injured workman and his family; in a minimum of education for his children; in an increase in the number of persons dependent upon private or public charity for support; and in untold suffering and misery which never come to public notice. Society is vitally interested in the enactment of workmen's compensation laws.

With nearly every civilized country having discarded the employers' liability system and adopted the principle of workmen's compensation, can the United States afford to longer prove a laggard in the march towards the goal of justice to the industrial workers on whose prosperity and well being the very life of nations depends?

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CHAPTER LIII
BASIS OF LIABILITY FOR NEGLIGENCE

BY THEOPHILUS J. MOLL

THE Golden Rule in law is expressed in the legal maxim "*sic utere tuo ut alienum non laedas*," which, being liberally interpreted means that one should so exercise his own legal rights as not to interfere with another in the exercise of the latter's legal rights. It is natural and fundamental that a person should be responsible for his own acts and that as to an innocent person no one should be permitted to profit by his own wrong, whether it be the breach of a contract, or the intentional or inadvertent violation of what we may conveniently term natural rights, such as personal safety, reputation or property. However, in the present, growing complexity of life and its myriad relations, one acts not only in person, but very commonly by or through a representative. Corporations, public and private, having no tangible form, necessarily act through representatives. A partnership and other relations of joint enterprise or ownership generally act through one, rather than all, of their number and frequently a third person as representative. In all these instances the legal principle applies that whoever acts through another acts for himself. It follows that if, under the first principle, he had acted wrongfully in person he would be responsible, and if, under the second principle, he so acts he is likewise liable. But why?

Inherently it appears unfair that if one injures another, a third person not personally contributing to the injury should be liable, but when examined, numerous cases occur where such result follows. If a man throws

a missile at and strikes another, it is readily perceived that he is responsible for his wrong. If he sets in motion an animate object, whether brute or human, with purpose to injure another, he is liable, because such is the natural and probable consequence and having been personally instrumental in bringing about such result he should be answerable.

But the situation is not ordinarily so simple and the reason and the rule are not so clear. It is those instances in which one person acts through another, with no legal intent to do harm, and such other through his perverseness, incompetence or carelessness inflicts an unintended, unforeseen injury, that difficulty arises.

Representation involves at least three different relations; namely, Principal and Agent, Master and Servant, and Employer and Independent Contractor.

The lines of demarcation between these are indistinct and at times hard to determine. It is sufficient for our present purposes to say that an agent is a representative whose main function is to bring his principal into contractual relations with third persons, a servant is one whose chief function is to perform some operative act for and on behalf of the master, and an independent contractor is one who carries on an independent calling and exercises that calling on his own behalf but in furtherance of the interests of his employer. Either of these representatives may be perverse, incompetent or careless and may thereby so act or omit to act as to render his constituent legally liable. Moreover the very relation may render the respective constituents and representatives mutually responsible to each other.

In the main, agency in its broadest sense and embracing each of the relations named, rests upon consent. Certain situations arise in which there is an implied agency, as in case of parent and child, but these are not real agencies in the legal sense. In these liability grows out

of the very relation as a matter of enforced duty, but in true agencies the liability is fundamentally and finally based on the legal consent of the constituent and representative. President Taft, while judge of a federal court, said in a leading case on this subject: "The principal must intend that the agent shall act for him, and the agent must intend to accept the authority and act on it, and the intention of the parties must find expression either in words or conduct between them." While this was announced as to the first relation above named, it doubtless applies equally to the other two. This idea is common in American and English courts but does not prevail under the civil law of the modern Latin races, in which the liability is held to grow out of the mere relation, as in our cases of mere implied agency.

Anciently, among our forefathers, there was a greater degree of liability imposed on principals and other constituents than at present. Then they were little short of absolute insurers against damage, civil or criminal, done not only by their animals, but by their slaves, serfs, employees and household members. Gradually this has been ameliorated and now the "consent rule" governs. We shall later attempt to explain the application and limitations of this rule. By statute and court decisions, the result was eventually reached that no one should be held answerable for another's conduct unless he himself was in some way connected with the wrong. One of the most difficult ideas to explode was the old fiction, doubtless borrowed from the civil law, of "identity" by which the real wrongdoer was assumed in law to be the *alter ego* of the one charged with liability. Even to this day we find some vestiges of this notion, notably as to husband and wife, parent and child. The true explanation is the other way. Blackstone says "The wrong done by the servant is looked upon in law as the wrong of the master himself," assuming, of course, that the relation rests on

consent. However, as eminent an authority as Justice Holmes of the United States Supreme Court adheres to the idea of "unity of person" as the basis of agency.

At the outset of this idea the constituent, usually a master, was liable only when he commanded his servant to do a particular act, but before a great while he was held accountable for whatever the servant did pursuant to a general order. In turn the servant was immune from liability, having simply done a commanded act which he, at that time, was bound to obey, being little above a slave in the social scale. But as the servant came into his own and became a free agent, capable of consenting to serve, his immunity for his own acts disappeared, though the liability of his master continued. A leading English authority, Sir Frederick Pollock, declares the present rule as follows: "Whoever commits a wrong is liable for it himself. It is no excuse that he was acting as an agent or servant on behalf or for the benefit of another. But that other may also well be liable, and in many cases a man is held answerable for wrongs not committed by himself." No doubt, this is a correct exposition of the rule today.

The general rule is that the principal is bound by any act of an agent who is acting within the actual or apparent scope of his authority, and such apparent authority may be established from circumstances, notably by the conduct of the principal leading the third party reasonably to believe the agent has the authority he assumes to have. In other words, liability is predicated upon the real or apparent consent of the principal. At first it was limited to particular commands but later, as now, it embraced general commands or authority; for as one learned author declares "social, industrial and commercial development required that the law as to the master's responsibility should be put on a broader basis, and that

his liability for his servant's acts should be much more extended"; the same demand applying equally to principal and agent. It was presumed that when one was delegated with authority to do a certain act for the benefit of his constituent this delegation carried with it in legal contemplation authority to do all incidental acts in connection therewith which were in furtherance of the affairs of the constituent. This presumption, based generally on fact, has ripened into a positive rule of law and still prevails. The question which presents itself is: did the representative have authority to act for his constituent, embracing within its scope the doing of the particular wrongful act? If so, the constituent is liable; otherwise not. The determination of such question is essentially one of fact; though the governing principle is, of course, one of law.

Likewise, the general rule is that the master is liable for the acts of his servant done in the course of his employment, and this even though the master has privately instructed the servant to the contrary and though the act of the servant is manifestly not for the master's benefit. But even here the idea of consent still governs. The consent of the master that the servant shall somehow act for him is real; the course of his employment is apparent and so far as the injured person is concerned remains unchanged in spite of secret instructions; the two combine to keep the master still liable. But, of course, the master cannot, in reason, be held liable generally and in all events for every wrongful act his servant may be guilty of. A liability so extensive would make him a guarantor of the servant's good conduct, and would put him under an obligation which prudent men would hesitate to assume, except under stress of necessity.

A person is answerable for such results as proximately (that is, naturally and probably under similar circum-

stances) result from the act he does, or from the act which another, with his consent measured by legal standards, does. The fact that the other disobeys orders does not, of itself, change the situation. In truth, such very disobedience may probably, or at least possibly, be foreseen or guarded against. In any event the master who has had the selection, direction and legal control of the servant ought to suffer for the misdoings of the servant while about his master's business, rather than an innocent third person on whom injury has been inflicted and who has had no voice in selecting and no power to control the wrongdoing servant.

Various theories have been advanced as to why a master should be held liable for the negligence of his servant. (Negligence implies the failure to use due care under the circumstances, and it may be a passive omission to act, or an active effort, short of intentional injury.) One is that the master is liable from the bare fact that he has employed a servant who turns out to be incompetent. This does not imply carelessness on the part of the master in selecting an incompetent servant, as some of the authorities seem to indicate, but that having selected a servant at all, it is proper that by reason of such selection the master should assume the danger (if the use of such term is proper) of such servant not being or remaining competent. Another is that the person injured is actuated by motives impelling him to seek out someone financially able to compensate him for his loss and that in the great majority of cases the one thus able is the master rather than the servant. This may be true in many cases, but as a general principle it is undoubtedly untrue. It has been suggested by some of those urging this reason that the courts have lent their aid to the plaintiffs along these lines. To the writer, however, it seems that the converse of this is true in the main, and that public opinion and popular legislation are presently causing the courts to

undergo a marked transition to a judicial stand more in harmony with what should be the true criterion, namely; to make no discrimination between parties litigant on the basis of wealth or social standing.

Another theory, that of Justice Holmes above referred to, bases the master's liability on the ancient legal fiction of identity, and this in some historical and logical aspects is more or less true. But being a mere fiction, it is unsatisfactory at best and really furnishes no acceptable reason. The suggestion of the eminent English jurist, Lord Brougham, that as the master reserves the right to discharge the servant he should be held liable, would be good were it not for the fact that ordinarily such discharge does not, and cannot, occur until after the harm has been done and if so affords little, if any reason for the rule imposing liability.

Chief Justice Shaw of Massachusetts in a leading case decided three-quarters of a century ago, said: "This rule is obviously founded on the great principle of social duty, that every man in the management of his own affairs, whether by himself or by his agents or servants, shall so conduct them as not to injure another; and if he does not, and another thereby sustains damage, he shall answer for it." This approximates to the correct solution.

The true reason seems to be that the master is what is technically known as the "procuring cause," that is, it is he who sets the servant in motion in performing his duties in the course of his employment and these being presumably, if not actually, for the master's benefit, the master in anticipating such benefits is reasonably and legally held chargeable with the detriments growing out of the relation. This is the view commonly accepted by the authorities of the present day and it is certainly not only tenable but is reasonable and just. Saying that where the master sets in motion a chain of causes, em-

ploying to that end the person and will of another person, he is and should be liable for the latter's acts in conducting his business, is almost, if not quite, axiomatic.

It follows that if the servant was really doing an act devolving on him as such servant, and that if the master himself had done the same act in the same way and as a result would have been liable, then the master is liable for the servant's act in question. In other words, the relation of master and servant sufficiently shows the master's connection with the act and the requirement of the early statement is met that to hold one liable for another's act he must be connected therewith. In a recent edition of Judge Cooley's classic work on Torts it is said: "That which the superior has put the inferior in motion to do, must be regarded as done by the superior himself and his responsibility is the same as if he had done it in person. This responsibility covers acts of omission as well as acts of commission, and embraces all cases in which the failure of the servant to observe the rights of others in the conduct of the master's business has been injurious." "The test of the master's responsibility is not the motive of the servant but whether that which he did was something his employment contemplated, and something which, if he should do it lawfully, he might do in the employer's name."

A master may be liable to his own servant as well as to a third person. Such liability grows out of the breach of some duty legally owing by the master to the servant. It is said that these duties are implied by law from the relation, and that though usually regarded as being implied undertakings of the contract between the parties, they are equally well considered as arising out of the general duty resting on every person to exercise due care for the safety of others.

Recent cases have placed a limitation upon the general liability of a master, in that the common law in most



states, in more or less varying terms, declares that a master is not liable to one of his servants for injuries growing out of the wrongdoing of another such servant. In other words, the so-called "fellow servant doctrine" has been engrafted upon the general rule as a notable exception. The master, however, remains liable in all cases in which his own personal wrongdoing contributes to or wholly causes the injury to the servant, the same as any other wrongdoer would be, and to this extent the rule is preserved in its integrity "no man should profit by his own wrong." In the leading American case on the subject of liability for a fellow servant's wrong, the court in substance held that servants engaging in a common employment are presumed to take into consideration the risks ordinarily arising in such employment in determining what wages they will accept, and hence it would be unreasonable to negative this presumption by imposing upon the employer a greater liability than he contracted for, namely, that he should answer for the very damage done by one servant to another when by the presumed terms of the contract this had either been waived or had been compensated for in advance by paying higher wages. In truth, this presumption at the present time is often well nigh violent, but the common law has become so fixed on this general principle that positive legislation, actively at work, is making a decided effort to overcome its far reaching effects.

Even the common law recognized certain limitations and restrictions upon the above exception to the general rule and almost universally there has been adopted what is known as the "vice-principal rule," by which certain duties are recognized as belonging inherently and fundamentally to the master, the delegation of which to subordinates does not exempt the master from liability. In other words, certain recognized duties towards his servants are by law imposed on the master and these he is

bound to perform. Whether he performs in person (and for his wrong in this case he is of course liable) or entrusts the performance thereof to another, his legal liability for a wrong done is just the same. Chief among these duties are his obligation to furnish reasonably safe machinery, appliances and tools with which the servant is to work, a reasonably safe place in which to work, rules and regulations under which to work, suitable directions to an immature or inexperienced servant, and the like. Legislation is adding to these duties from year to year and the tendency is to abolish, or at least radically to modify, the fellow servant rule and to take into consideration the changed social, economical and commercial relations of master and servant. Even under the common law, already established and generally followed in the absence of statute, the master is under obligation to employ suitable servants, and if he is negligent in employing those who are wanting in the requisite care, skill and prudence for the business entrusted to them or in continuing such persons in his employ after their unfitness has become known to him, or when by the exercise of ordinary care, it would have been known, then he will be liable for an injury to a fellow servant due to such unfitness or incompetency, provided the injured servant does not by his own legal consent assume the risk attending such incompetence. For it is the general rule that a servant assumes the risk of all dangers incident to his employment, no matter how they arise, against which the servant may, by exercising ordinary care, protect himself. But a servant is never presumed to assume the risk of the master's own negligence; and he may not contract to do so. The same rule governs where the negligence of the master and one servant unite in injuring another servant.

There has been a very great amount of scholastic and juridical discussion as to who are fellow servants and the authorities are by no means harmonious. In some states,

the uncertainty is sought to be cured by statute. But it is not within the scope of this article to enter into a discussion of this subdivision of the general subject.

As in all other cases of injury due to negligence, the contributory negligence of the injured servant bars his recovery of damages under the common law, except that in a few instances (notably admiralty) the doctrine of "comparative negligence" applies. The general rule is changed by positive legislation in some states and there is a tendency to modify it in many other states.

The doctrine "let the superior answer" renders the master liable for those acts of his servants committed in the due course of his employment. But an independent contractor, as above defined, not being a servant in the legal significance of the term, sustains no such relation to his employer as will render the latter liable for his acts, whether they be performed within or beyond the scope of the employment. The doctrine quoted has no application to an independent contractor who is employed, for instance, to do a piece of work for the employer during the performance of which a third person is injured. As said in a leading New York case, it "is applicable only in cases where the party sought to be charged stands in the relation of superior to the person whose wrongful act is the ground of complaint." The general rule is that the employer is immune from liability for the acts or omissions of his independent contractor or for the latter's servants.

Mr. Street, in his scholarly treatise, says: "The reason is obvious. The conductor, or one who lets the contract, has no control over the employee of the contractor and hence is not treated as a master. He is only concerned with the finished product of the labor, and the contractor, both in fact and theory, is the master of those whom he employs. Simple as this appears, the principle in question was violated in probably the first case pre-

senting facts of this kind. (Decided in 1799.) But that case was soon discredited, and the law is now well settled that the man who has immediate control or the right of control over the work is the master."

Another learned annotator, in discussing the employer's non-liability, says: "It seems clear . . . that the real and in fact only available basis for the doctrine which declares such a delegation of functions to be, under certain circumstances, allowable is public policy. . . . It seems clear, however, that the rule as to the non-liability of employers has been formulated rather with reference to their interests than with reference to those of possible sufferers from the torts of the contractors. . . . The judicial situation, therefore, would seem to be simply this, that the considerations of expediency which according to the most generally accepted theory, constitute the only rational foundation of the rule which declares a master to be liable for the torts of his servant, are deemed to be inoperative, or to be superseded and overridden by other and antagonistic considerations of expediency, in some classes of cases where the person employed is exercising an independent business."

Legislatures and courts have engrafted on the general rule of non-liability of employers of independent contractors, certain more or less well defined exceptions. Thus, it is sometimes said that the employer is liable: (1) where the plaintiff is injured by an act done in the due performance of the contract, but not where the contractor acts in violation thereof; (2) where the work contracted for obviously exposes others to unusual perils; (3) where the contractor is notoriously incompetent or untrustworthy; (4) where the employer makes himself personally guilty of negligence, resulting in injury; (5) where the wrongful act is a violation of a duty imposed upon or assumed by the employer by express contract; (6) where the duty is imposed by statute; (7) where the em-

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...yer retains or exercises active control of the contrac-
...r; (8) where he has ratified the wrongful act; (9)
...where the employer has accepted the work and thereafter
injury results therefrom.

The general rule and the exceptions apply as well,
...arily, where an independent contractor stands in the
...tion of employer to a subcontractor. Moreover, as to
his own servants the independent contractor has the same
...bilities and exemptions as pertain to masters ordi-
...arily.

PART VI
SPECIAL INSURANCE

CHAPTER LIV

BURGLARY INSURANCE

BY DAVID W. ARMSTRONG, JR.

IF BY history is meant a systematic and connected *written record*, then burglary insurance has no history for there certainly exists no such written record. It, in fact, possess virtually no bibliography, so that the obtainable *historical facts* are few and meagre.

Burglary Insurance, originally strictly an insurance against burglary and nothing more, was probably founded in London in or about the year 1865.

“The Insurance Cyclopædia” exhausts the subject in this brief note: “Burglary Insurance Company was projected by J. H. Tilley, in 1865, with a preliminary capital of two thousand pounds.”

It seems a fair inference that Mr. Tilley's modest company was the first. “The American Protective Mutual Insurance Company against Burglary,” a small company which transacted a local business at Reading, Pa., claims to have been engaged in burglary underwriting as early as 1885, and to have been the first company writing that line of business in America. This company no longer exists, but was absorbed some years ago. No sufficient reason appears for denying the claim of the American Protective to priority. It is, at any rate, the fact that even in 1889 the line was just beginning to be written by two or three other companies, who were entering upon it doubtfully and experimentally. Headway was gained slowly and gradually during the succeeding ten years, by the end of which time the volume of business was substantial and the number of companies writing the line was rapidly increasing. The proportions the busi-

ness has at this time attained are shown by the figures that will be found near the close of this chapter.

Burglary Insurance stands out among the numerous forms of "Special Insurance" to which the complexities of modern social and business conditions have given rise as possessing distinctly unique features. It is not merely the fundamental fact that burglary insurance is essentially an insurance against crime which thus distinguishes it, but rather the fact that the crime of burglary is in itself, in its attendant circumstances, and in the customary traits and characteristics of the burglar, strongly differentiated from other crimes.

The burglar not only incurs the risk of the penalty of the law equally with other criminals, but in addition thereto he, in many cases, encounters grave hazard to life and limb peculiar to his own career of crime, and he, therefore, often possesses at least that semblance of manly qualities that goes along with physical courage and indifference to danger; and bravery, in however evil and reprehensible a cause it may be displayed, saves its possessor from that measure of detestation always visited upon cowardice, even when the conduct of the coward is far less atrocious than that of the man of courage.

The burglar of "the old school," invariably brutal and desperate, was as well defined a type as was to be met with in any walk of life. He has, moreover, his place, not an inconspicuous one, in drama and in fiction, and the appeal he makes to the imagination is sufficient to surround him with a certain sort of sordid romance. Dickens has made of "Bill Sikes" as vivid and as real a personality as any historical figure of that day, and so indelible is the impression left upon the mind of every reader who follows the thrilling and dramatic story of the life and death of this brutal thief—a stranger to fear for whom no deed was too desperate—that for well nigh

two generations no other criminal in literature has been known in the same familiar way to such vast numbers as has "Bill Sikes," the burglar.

The various conditions above pointed out operated to create an atmosphere in which the burglar and his crime stood wholly removed from association with the idea of *business* in any conceivable phase or guise, even in its widest ramification. On the contrary, there probably, at the outset, seemed to the mind of almost everyone, something wholly incongruous in bringing burglary within the limits of practical, matter-of-fact business, as was the effect of accepting the losses it entailed as a proper hazard for the underwriter.

The view that prevailed at first was that society was concerned with burglary only as a crime to be punished and suppressed; that to the agencies and instrumentalities provided by law for the protection of society against crime belonged the duty of taking cognizance of the crime; but that it possessed elements and possibilities upon which would be founded and from which would be developed a legitimate business of any consequence whatever was a conception likely to be deemed so fantastic that few would have been willing to avow it.

This hesitation, this almost unwillingness, to accept burglary insurance, in its novel and unaccustomed stage, as a serious proposition, inevitably proved a serious check upon the business in the early years, and accounts for the severe struggle it had to pass through before it obtained a firm foothold.

There was an impression, almost universal, at the outset that there could be no proper field for burglary insurance; first, because loss by burglary was not a sufficiently common occurrence for the public to be awakened to the wisdom and benefit, as a business proposition, of paying for indemnity, in other words, that such indem-

nity was not only not "a long felt want," but, it was a want non-existent, because unfelt; and, secondly, because adequate protection against fraudulent claims was impossible, and the company doing any considerable volume of business would indubitably encounter insolvency and ruin through the fraudulent claims it would be compelled to pay.

Time has shown that both the supposed reasons above mentioned for regarding the business as not feasible and workable, were misconceptions, and Burglary Insurance is today a firmly and securely established business, with an annual premium income of millions of dollars, and disbursing every year hundreds of thousands of dollars in an indemnity fairly and honestly due its policyholders; while such payments, at the same time, in no way menace the solvency of the companies by which the line is written.

The first of the misconceptions just spoken of was unquestionably due to the absolute lack of statistics, not merely in regard to the crime of burglary itself, the frequency of its perpetration, etc., but especially as to the magnitude of the losses in money and property sustained thereby.

The work done by the companies which inaugurated burglary insurance was, therefore, at first largely educational, and the means employed to that end were broadcast and persistent advertising, much of it of an exceedingly clever and ingenious character. These methods are bearing abundant fruit, as already stated, and the conviction is gradually being brought home to every owner of valuables with a direct application to his own case, that burglary and the kindred crimes covered by the policies of companies writing burglary insurance are so common, and often so disastrous in their consequences, that they constitute at all times an immediate and very real danger to property. The record of such crimes, as scattered in a disconnected and unrelated way through

the columns of the press, conveyed an impression far short of the facts as to their frequency and the magnitude of the losses involved, and it was only by systematic collection of the data, and the presentation thereof in an orderly and comprehensive manner that the real conditions were made plain and that the enormous proportions of the losses suffered through the crimes in question began to be appreciated.

Resort to the means of indemnity afforded by insurance was the logical outcome of this awakening on the part of the public to the risks it was incurring, and in consequence, burglary insurance, within the period of say ten years, from 1901 to the present year, has progressed with gigantic strides.

From the original stock of what was properly and strictly an insurance against burglary has sprung a number of off-shoots consisting of insurance against theft or larceny, under which there is a classification of risks in accordance with the details of the hazard to be covered; insurance against highway robbery, or "hold-up," in all its various phases with classifications on the same principles as in the case of larceny or theft. For each and all these risks an appropriate form of policy has been devised, and the policy-contract is framed with specific reference to the conditions in each as *to the time and place, and the persons in respect to whose acts* the company undertakes to indemnify the assured.

The insurance may, for instance, cover theft or larceny by servants or other inmates of the house, or by a guest, by sneak-thieves, or by other outsiders.

The traveler may insure his personal effects while they are in his hotel, or in the custody of a common carrier.

Money and valuables to be delivered by messenger may be insured.

The merchant may insure against theft or larceny by his employees.

And the contractor, manufacturer or other employer of labor, may insure the money for his payroll while in transit to the place of payment, and while being actually disbursed.

All of these various branches of the business have shared in the immense growth it has experienced.

In the light of the vast growth and extent of the business, and of prospects for the future, which make its present proportions appear insignificant in comparison, it is an interesting fact, in connection with its early history, that its founders and originators looked upon it as an experiment, and entertained great fears and misgivings as to its success, and this view was still held at a time so recent that even the Cambridge Edition of *The Encyclopædia Britannica*, now issuing from the press, and which claims to say the last and latest word on all subjects, dismissed burglary insurance in ten or a dozen lines, saying that it is recognized as an experiment, and that the amount of annual premiums is so small as to be unimportant. The great work is, in this respect, however, clearly out of date before its publication has been completed.

It is not in the least extraordinary that the second of the reasons above stated for regarding burglary insurance as an impracticable business proposition, namely, that the companies would be wrecked by fraudulent claims, should have found general acceptance.

The moral hazard in burglary insurance, and in the kindred risks the companies cover, is undeniably far greater than in any other class of insurance. There is a large measure of moral hazard, it is true, in fidelity insurance, a considerable degree in fire insurance, and even an appreciable degree in life insurance, but in the risk covered by the burglary underwriter the moral hazard is pre-eminent, and wholly out of comparison with other lines in that particular.

The element of moral hazard derives its almost transcendent importance in the case of risks covered by the burglary underwriter from the fact that the apparent ease with which money may be got from the companies on fraudulent and fabricated claims, is oftentimes a severe temptation even to the average honest man, and to the crook wholly irresistible. And just as in the case of fire insurance, the man, to a moral certainty guilty of arson, may sometimes collect the policy, and as in life insurance a payment may be made upon a fraudulent claim of death, so in burglary insurance, and doubtless with materially greater frequency, the companies, because of a lack of legal evidence, may have to pay fraudulent and bogus claims when there is not a shadow of doubt of their fraudulent character, but the number of such fraudulent claims is by no means so large as the conditions of the business would seem to the uninitiated to invite, and the number of such fraudulent claimants who actually succeed in making good against the companies is smaller still, altogether too small, in fact, to materially affect their prosperity.

The poor success attending the efforts to victimize the companies by bogus claims is explained by a variety of circumstances.

For one thing, the business, by its very nature, demands that the barriers be put up against the crook at the outset, and unceasing vigilance exercised to see that he does not get past them. No safeguard and no precaution that experience and ingenuity could suggest and devise (the adoption of which the conditions of the business render feasible) have been omitted. One of the most important of these preliminary safeguards is the pains taken in the matter of the moral hazard as related to reputation, occupation, etc., of the assured. A thorough system of inspection, in the case of certain classes

of risks, leads to the rejection of such as are, for any reason, extra-hazardous and, therefore, undesirable.

All policies, insuring against loss by burglary, contain the provision that the company shall not be liable unless the "felonious abstraction of the insured article was accomplished by an entrance into the premises effected by the use of tools or explosives, and unless there are visible marks upon the premises made by the tools or explosives of the actual force and violence." The great value of this provision as a safeguard against pretended losses by fake burglaries is manifest, for while the signs and insignia that are "visible evidence of an entry by force and violence" may be created by the assured in support of a fraudulent claim, the requirement that such "visible evidence" must exist materially helps the companies' chance of detecting the fraud.

The crook may commit some oversight in manufacturing his evidence; and besides the false and the genuine are never the same, and in any case the discrepancy may at any given moment appear.

And, moreover, *the provision in question clearly defines the risk the company accepts*, and fixes by agreement of the parties *the character of the burglary* against which the assured is entitled to be indemnified, namely, "where the entrance into the premises is effected by force and violence by the use of tools or explosives."

A recent decision of the Appellate Division of the Supreme Court of New York, First Department, has, however, put a construction upon this provision of the burglary policy by which burglary underwriters have been decidedly startled. The court holds that the entrance into the premises need not be effected by the use of tools or explosives, that there need be no visible marks upon the premises made by tools or explosives of the actual force and violence used in making the felonious entry, but that if such entry is made merely by turning the

knob of the door, and the goods are taken away, the crime constitutes "*burglary*" in the third degree under the Penal Code of New York, and that the company is liable under its policy because it insured against "*burglary*."

This construction seems to deny the freedom of private contract, and to deprive the parties of the right to define in the policy, as above mentioned, the character of the risk against which the company insures, and thereby wholly nullifies a provision of the policy upon which the companies have relied. The protection of which this decision deprives the companies has always been considered as well nigh vital to the business, namely, *the right to define in their policies the exact risk assumed*, and it would seem the question is so important as to render it imperative the case should be taken to the Court of Appeals for final decision there.

But the ultimate weapon against the dishonest insurer, and one which is no doubt far more effective than any other, is that whenever the presumption of fraud is reasonably clear, the fraudulent claim is fought to the end. The lesson the crooks must learn is that the game does not pay.

Those without experience in the business might think in the case of insurance on money, jewelry and other valuables of that character, the insured would have little difficulty in holding the company on almost any alleged claim of loss. The situation, pretty nearly invariably, is that the company has no witnesses who, from personal knowledge of the facts, can testify in contradiction, while the assured himself testifies and supports his fraudulent claim by such witnesses, members of his family and others, as he may think sufficient. This situation results from conditions that are fundamental in the business, but even in these cases, and they belong to the class in which the company is at the most

serious disadvantage, the fight is not so unequal as it seems.

In the first place, truth possesses wonderful powers of self-assertion and that advantage rests solely with the company; and again, a condition of the policy requires "immediate notice" of the loss to be given by telegraph to the home office of the company, to the general agent by whom the policy is countersigned, and also to the company's local authorized agent, and to the public police authorities having jurisdiction. This opportunity for investigation while the facts are fresh is a powerful check upon fake and fraudulent claims, the only real basis for which is the desire of the insured to get, on the "something for nothing" principle, what he supposes will be some easy money.

But the provision of the policy upon which the company places its main reliance to thwart attempted frauds, is probably that by which the insured is required to submit himself and certain other named persons, whom it may be reasonably assumed are under his control, to examination by the representatives of the company. This provision is worth quoting at length:

" . . . shall submit himself and associates in interest and his household and employees to examination and interrogation by the company's representatives, under oath if required, and subscribe the same, and shall produce such other evidence as may be reasonably required to substantiate the claim, and such reasonable adjournments of the said examinations as the company may desire shall be allowed and any of the parties, including the assured, so appearing for examination, shall upon the demand of the company be again produced for a second and further interrogation, and any alleged loss, in connection with which the assured shall refuse to comply with this provision shall not be held to constitute a cause of action against the company under this policy."

It is obvious the examinations of which the company may avail itself under the foregoing provision, enable it to trace the history of the alleged lost article or articles, to establish identity and actual value, to ascertain when and from whom purchased, if bought within any reasonable number of years, and to have disclosed the names and addresses of persons the company may find valuable as witnesses in its behalf.

It is not meant to imply by insistence upon the efficacy of the provisions of the policy to which reference has been made, that they are, even in connection with the other agencies by which the fraudulent claims are combated, invariably effectual; but only that by reason thereof the amount the companies are compelled to pay in settlement of fraudulent claims after all has no material effect upon their prosperity.

We have discussed the provisions above considered as if they were uniform in the policies of all the companies. This is not *literally* correct, but in their general tenor and scope the provisions are standard features of the policies of all the leading companies, and the slight discrepancies are such that for our purposes the policies may be treated as if they were, in fact, in this particular identical.

The class of risks grouped under the general designation of bank burglary insurance, and which are in fact several different forms of hazard related to banks, constitute by far the most desirable and satisfactory branch of burglary insurance underwriting. Bank burglary insurance in its technical sense covers insurance against the following hazards:

First, against burglary in its current and common acceptation with entry into the safe or vault, effected by the use of tools or explosives.

Second, against "hold-up" perpetrated in the bank

by compelling its officers or employees to hand over the exposed funds.

Third, against damage to the safe, vault, furniture, or building, caused by the use of tools or explosives.

Fourth, against robbery, in any manner, of the bank messenger when engaged about his duties outside the bank.

Insurance against the three last named hazards is, of course, Burglary Insurance only in the technical or special sense, which has, for reasons of convenience, become attached to the words as a trade term. The same thing is true of insurance against larceny by domestic servants, and other forms of larceny connected with residence Burglary Insurance, insurance of travelers' valuables, insurance on pay-rolls, etc., all of which, in the business, pass, for many purposes, under the general designation of Burglary Insurance, not because they are such in any proper sense, but because of the convenience and necessity of having some term which is inclusive of all the various lines written by burglary underwriters. So we have assumed that "Burglary Insurance" as the title of this chapter will be taken in the inclusive sense of the term.

The reasons why bank burglary insurance is the most desirable and profitable branch of the business, are these: Since it is an exceedingly rare occurrence for bankers to instigate or be parties to ostensible robbery of their own banks, the element of moral hazard is, in a large measure, eliminated. Bankers are, as a class, men of intelligence and businesslike methods, who comprehend the force and effect of the contracts they make, recognize that the obligations of such contracts are reciprocal, and they, therefore, ordinarily demand of the insurer only the fair performance of the contract according to its terms, which is by no means true of the insured of some other classes. Further, the business is almost

consistently lucrative, in so far at least that the premium account and the loss and expense ratio, under average conditions, leave it feasible and workable.

It will be noted that what has so far been said has to do for the most part with the mere incidentals of the subject, and has touched very lightly, if at all, upon anything in the nature of essential principles, and there is a very sufficient explanation of this fact.

Burglary Insurance has indeed few of the elements of scientific insurance—very little in the way of essential general principles—on which to rest. There is entirely lacking, for instance, any general actuarial principle such as the life tables furnish as a scientific and exact basis for calculation in the case of life insurance. It is certainly much more than a “game of chance,” and yet it may be the “doctrine of chance” is more nearly the corner-stone of the business, in its present stage of development, than is generally recognized. Safe generalizations are, in most affairs, possible only from a vast number of instances, and the life of burglary insurance has not been sufficiently long to furnish data from which the scientific principles of the business, if they exist, can be deduced. It may be that the lapse of time, with its ever increasing multiplicity of transactions, will afford a basis for the desired inductions, but today each risk is, in a large measure, determined by its own conditions. This, however, manifestly does not mean that there is an entire absence of system in the business, and that there are no settled rules and requirements applied to its administration. That would mean chaos, and quite the contrary is true.

We have, for instance, pointed out a most efficient system of safeguards against fraudulent claims, and all other branches or departments of the business are administered under their own appropriate rules and regulations.

The initial matter is, of course, some general standard in regard to risks that should be accepted, and under the standard adopted by most of the companies no small number of occupations are classed as undesirable, solely from the nature of the occupation. It is needless to enumerate the whole of these "prohibited risks," but among them are retail boot and shoe dealers, cutlery dealers, hardware dealers, notion stores, junk shops, cigar stores, fire-arms dealers, sporting-goods dealers, secondhand stores, imitation jewelry concerns, pawn-brokers, sanatoria, boarding houses and country-stores. These risks are tabooed in part from the standpoint of moral hazard, and in other cases because the business itself is regarded as extra-hazardous. In some instances, however, where the business is of the highest class, an exception is made, and the risk accepted, and in many of these cases where the stock of goods will not be insured, a policy covering the contents of the safes may be written.

Notwithstanding the fact that each risk is so largely a matter of its own conditions, the premium rate is not arbitrary and haphazard. To illustrate: For the purposes of insurance, mercantile safes are put by the burglary underwriter in three classifications: the fire-proof safe, the burglar-proof safe, and the fire and burglar-proof safe, all of which, of course, depends upon construction and material, with a premium rate fixed in each instance in accordance with the classification of the safe. In the case of bank safes the time-lock also receives recognition as affording additional security. There are, moreover, numerous other considerations which are taken into account in determining premium rates, among which and of the first importance is the question of police protection. The hazard is obviously lessened in the case of well-guarded premises, whether by means of an efficient public force, or by a private watchman of the insured, and the insurance is conse-

quently cheaper under those conditions. Close regard is always given to this question, and if there is an undue degree of exposure, whether it is on account of an inadequate public force or a grossly inefficient public force, or the absence of a private watchman in circumstances where prudence demands he should be employed, the risk is rejected.

Bank Burglary Insurance in the stricter sense is written to only the most limited extent in large cities, but is almost universal among the banks in the smaller towns and villages throughout the country, and this matter of police protection is consequently ever present with the burglary underwriter; most often in the aspect of the adequacy in the number of the force employed. The reputation of a community for law and order, whether it is good or bad, in the highest degree affects the risk, and may in some circumstances render it uninsurable.

All the leading companies are, as a matter of sound business policy, simplifying their contracts, and eliminating provisions imposing merely technical requirements on the insured. This tendency has probably gone about as far in the direction of making policies incontestable, as the nature of the business will admit; and even where, under the provisions of the policy, the companies might avail themselves of technical defenses, it has become an exceedingly rare occurrence for them to resort to that means of defeating an honest and otherwise meritorious claim.

A striking example of the greater liberality in contract provisions on the part of the companies is the change in many policies by which the insured is no longer held to warrant the description of the risk, and of material statements affecting the same. The result of the warranty, which was formerly universally required in all forms of underwriting, was that, if any statement was found to be false, the insured forfeited all right of

indemnity under the policy—a harsh rule, often working great hardship and injustice. The underwriters of burglary insurance are introducing in some classes of policies the more lenient and far more just provision that an inaccurate description of the risk shall not forfeit all right of indemnity, but that the insured shall, nevertheless, be entitled to receive such amount under the policy as his premium would have purchased had the risk been correctly described.

A source of perpetual annoyance to underwriters of Burglary Insurance is the constant and persistent efforts of policyholders to obtain payment for articles that have been lost, or that have merely “disappeared.” Many of these claims are deliberate attempts at fraud by persons who know perfectly well that the claim is not within the provisions of the policy, and that the company is under no obligation whatever to indemnify against such a loss. And it sometimes happens that the broker, through whom the insurance has been placed, will support such a claim with the idea that the company will not, by a refusal to settle, incur his displeasure, and the consequent loss of business.

Other persons, however, make such claims in the utmost good faith. They are absolutely unable to comprehend the nature of their contract with the company, their rights under the policy, and the real obligations the company has assumed. Their reasoning—and beyond that they cannot discriminate—is that the insured article is lost, it has disappeared, and, *therefore*, the company must pay them for it. To their minds, “the felonious abstraction,” for which the policy provides, and disappearance from whatever cause, mean the same thing, and they consider that they are not merely insured against the loss of their possessions by larceny, but against their mere disappearance.

A case came under the notice of the writer recently,

which may belong to the one class or the other above indicated, as you may choose to think. A woman carrying a theft policy made claim against the company for a valuable ring. It was disclosed that prior to the attempt to collect for the ring *as stolen* she had advertised the loss in the newspapers, with an offer of a reward, and stated the time of the loss and the streets on and between which it had occurred. The case is an extreme one, for those who assert such claims usually do not first advertise the circumstances of the loss in the papers.

It has been decided to deal with the situation which claims of this character produce, by expressly covering it in the contract, and it is accordingly now provided in many policies that the insured shall produce *direct and affirmative evidence* that the alleged loss was due to burglary, theft or larceny, and that the "disappearance of an article shall not be deemed such evidence."

It is probably correct, as has been stated, that in the year 1885 only one company in the United States was engaged in writing Burglary Insurance was the small company doing an almost entirely local business at Reading, Pa. In the year 1910 thirty odd companies were writing burglary lines in this country, five of the number being foreign companies organized in England and in Germany. Of course, these thirty odd companies do not confine themselves exclusively to burglary insurance, but write other lines as well. The number of companies in England engaged in burglary underwriting in 1910 was eighty odd. The companies operating in the United States in the year 1910 received in premiums from their burglary business the aggregate amount of \$2,781,461 and they paid in losses in that year \$803,243. The business was profitable to the companies engaged in it with few exceptions, since the loss and expense ratio was not disproportionate, and the premiums provided

for the cost of getting the business and left a substantial margin to the good.

On the figures we have given, burglary insurance is justified of its record. On the purely financial side we find the business, though still in its infancy, sound, firmly established, profitable and attractive as an investment, yielding satisfactory returns on capital and with immense future possibilities. But insurance in all lines possesses another side than the purely financial, and is in some degree in the nature of a benefaction inasmuch as it is the instrumentality of a boon or benefit of which its object would otherwise be deprived in his hour of need. Tested by this standard, also, burglary insurance is an agency of great good to its beneficiaries. Through the indemnity to which he is entitled under his burglary policy, the victim of theft or robbery is not infrequently saved from insolvency and financial ruin, which the loss would otherwise irretrievably entail. This right of indemnity is a most valuable asset, a basis of credit on which a reorganization may be effected and a business given a new lease of life when there would be no other possible source from which capital could be obtained.

Burglary insurance has, therefore, by reason of the important functions it performs, and the great benefits it offers, assumed the rank of an institution among the agencies of the business world, and is certain to grow in usefulness and in popular favor.

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CHAPTER LV
AUTOMOBILE INSURANCE

BY CHARLES D. DUNLOP

MODERN as the automobile is, it was in use for a number of years before a satisfactory contract of insurance was devised to protect the owner from the several hazards to which property of this character is subjected. The automobile as a commercial product, that is, as a factor in the wealth and activities of this country, might be said to date from 1892, as prior to that time the capital invested in the manufacture of automobiles was so small as to have no bearing upon the wealth of the country.

The first statistics that have been recorded covering the total annual product of the automobile industry in the United States are for 1899, when an output of a little over \$1,000,000 was reported. In 1903 this increased to \$16,000,000 and has grown by leaps and bounds until the figures of 1910, when the total value of the product of the single year reached \$225,000,000. These figures represent only the output of American factories. Our exports for the past few years have exceeded the imports of individual buyers. In estimating property values created by this industry, our exports are more than offset by the enormous sum represented in the output of factories engaged in making automobile accessories, such as tires, lamps, tops, windshields and the individual parts that are used by many builders who assemble, in whole or in part, the cars bearing their name; nor would it be fair to assume that the full values created by the automobile industry represented new insurable values, for, while many of the vehicles are purchased solely for pleasure by people who had not maintained a stable, a

large percentage of the cars, both pleasure and commercial, represent values previously expressed in carriages or wagons. In fact, a modern five ton truck would replace two, if not three, drays and a half dozen horses.

Though we are pleased to regard the automobile as a recent invention, it is by no means new, as the term "automobile" in this country is used to describe any self-propelled vehicle, regardless of the power used or the purpose for which the vehicle was built. Perhaps the Manumotive vehicles used in China early in the fifteenth century and a carriage or chariot of similar motive power mentioned in Grecian history could hardly be termed self-propelled vehicles, though containing or carrying their motive power. The principle involved was no doubt similar to that of a vehicle built in Germany about 1650 which was propelled by two men riding upon it and turning a crank, a motive power common upon our American railways for the past fifty years. In connection with the description of this invention, it is stated that two heralds were required to blow upon horns warning pedestrians of its approach, a statutory precaution that exists in some parts of New England today, where it is required that all steam rollers must be preceded by a man bearing a red flag by day or a red light by night. Early in the eighteenth century reference is made by both French and English writers to various attempts to construct a road vehicle propelled by steam generated in a boiler carried within the vehicle. The first authentic description, however, of any such invention is that of Captain Nicholas Joseph Cugnot of the French Army, who completed and operated with a reasonable measure of success a self-propelled steam wagon in 1769.

As early as 1840 we find record of a number of steam propelled vehicles being in use in England, designed to carry both passengers and freight, and between 1840 and 1850 stage coaches carrying from eight to twelve pas-

sengers were operated with some measure of success and apparently with reasonable profit on some of the English highways. The slow development in the self-propelled vehicle was due more largely to prejudice on the part of the public than to a want of engineering skill. With the earlier appearance of these vehicles on the highways of England, laws were immediately passed restricting their use, finally driving them from the roads altogether. They were extremely heavy, cumbersome vehicles, occupying a large portion of the roadway, blocking it entirely whenever they endeavored to turn around, and no doubt made a great deal of noise. We find reference in the description of one of these steam stages or carriages to the fact that it could only be turned by going around a large circle, presumably by waiting until it reached some village where it could run around a block.

In 1885 the internal combustion high speed gas engine was invented by Gottfried Daimler, and shortly after this a somewhat similar engine was manufactured by Carl Benz of Mannheim and used successfully in propelling tricycles. With the creation of the internal combustion gas engine new interest was aroused and automobile development started up with considerable activity, particularly in France where the earlier stages of its development took place.

Automobile construction was not, however, taken up in the United States until 1891 or 1892, when Mr. Charles E. Duryea of Reading, Pa., completed a practical four-wheeled vehicle, which embodied many of the principles now retained in the construction of gasoline cars. Several other men, many of them still living and identified with the industry, brought out their initial efforts at approximately the same time. The first ten years of this industry saw many failures, though there are now several hundred corporations or firms in the United States engaged in building automobiles, more than half of which

conduct this enterprise in connection with, or in addition to, some other line of manufacturing.

In the earlier stages of automobiling when cars were restricted to the use of the rich and for pleasure only, they were insured, no doubt, against loss by fire under the regular fire policies of the companies and in the same manner as any other property, but the need for broader protection was soon evident and early in 1902 the Boston Insurance Company of Boston offered a contract to the automobile owners which insured them against the hazards of fire, transportation and theft, shortly followed by a reformation of the policy to include the hazard of collision, and it is of interest to note that, while this company was the pioneer in this form of insurance, except for a few earlier contracts written at Lloyds, London, their form of cover and the rate charged are substantially the same today as they were in the infancy of the business. Some time elapsed before any other company took up this form of insurance, though the Boston was followed later on by practically all of the marine companies doing business in the United States.

The automobile output of the country having, in 1907, exceeded \$100,000,000, the attention of other companies whose charters did not permit the writing of this class of business was drawn to this new field of premium income, with the result that a number of the fire companies sought amendments in their charters permitting them to assume the hazards of an inland marine business, and the competition from that time on rapidly increased. At the present time there are engaged in the automobile insurance business in this country about eighteen regular marine companies and some fifteen fire companies whose charters permit, by recent amendment or otherwise, the assumption of this hazard. There are also a number of mutual companies located in different parts of the country which offer automobile contracts of one form or an-

other, though as a rule they are not as liberal in their provisions as those of the stock companies.

In addition to these, there are about twenty-five casualty companies engaged in insuring against the hazards incident to the operation of automobiles which come under their charters.

What is known as a full cover on an automobile includes insurance against the hazards of

- (a) Fire or explosion.
- (b) Transportation, *i. e.*, derailment and collision.
- (c) Theft.
- (d) Damage by fire to personal effects carried upon the car.
- (e) Damage to other property by being in collision with the automobile insured—known as property damage.
- (f) Damage to the automobile insured by being in collision with some other object.
- (g) Loss of life or injury to the occupants of the car and legal liability for expenses in connection therewith.
- (h) Loss of life or injury to others and legal liability for expenses in connection therewith.

The hazards enumerated under headings a, b and c are all covered under the general floater policy issued by the marine companies, to which by endorsement or a rider and for a further premium are added the hazards described under d, e and f. The hazards enumerated under g and h are covered under the contracts of the casualty companies, which, when their charters permit, also assume the hazards described under e and f.

While the rates charged for these various forms of insurance seem burdensome, they are no greater than the necessities of the business require, as is evidenced by the fact that there has been little change in the premium charges of the companies, notwithstanding the enormously increased competition.

The industry is in its infancy and as an underwriting problem not fully understood. No phase of the insurance business at the present time expresses such a marked opportunity for moral hazard, and until cars are more perfectly constructed and more nearly standardized, removing the need and the incentive to replace old cars with new each season, there can be little hope of any material reduction in the cost of insurance.

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CHAPTER LVI
CREDIT INSURANCE
By E. M. TREAT

CREDIT insurance is a contract for one year issued solely to manufacturers and jobbers, guaranteeing to reimburse the insured for losses sustained through the insolvency of debtors, occurring during the term of the bond, in excess of an agreed-upon initial loss to be borne by the insured, on sales of merchandise shipped and delivered thereunder.

The magnitude of the daily trade transactions, the growing extension of sales on credit by wholesalers direct and through traveling salesmen to scattered and distant customers, the enormous losses sustained by wholesalers through insolvency of their debtors, the totals each year reaching huge proportions, frequently exceeding in amount the losses by fire, demanded that in some way the wholesaler who parted with his goods on the faith of the financial and paying ability of his customers should be protected against a curtailment of profits and a possible depletion of capital through bad debts, where reasonable prudence had been used in extending credit. Credit insurance supplies this protection.

Up to 1898 credit insurance was in practically a formative and experimental stage, the insurance being of a restricted nature and written at a low premium rate. Upon the passage of the national bankruptcy law in 1898, the policies were greatly broadened, covering all forms of insolvency and have from time to time been further liberalized.

Under the policy the insured bears the risk of the normal loss on his year's business. This initial or own

risk consists of a certain specified percentage of his annual sales, the amount of which is determined by calculation based on his record of losses, the normal loss in his line of business, and a consideration of any conditions or influences that might affect the hazard of loss. The excessive losses, those in excess of the initial loss, are paid by the company within the limits of the policy.

The insurance provided by the policy is limited to a percentage of the debtor's worth represented by the mercantile agency rating, a table of ratings being incorporated in the policy. The amount that may be proven on any one debtor is limited to a specified amount. This limit varies according to the amount of the policy and the other terms thereof. The insured has the privilege of selecting which one of the standard mercantile agencies shall govern the ratings under the policy.

There are two kinds of policies: first, what is known as the *regular policy*; second, what is known as the *combination policy*.

Under the regular policy, insurance is provided against losses occurring through the insolvency of debtors having a first and second grade rating as set forth in the table of ratings printed in the body of the policy. Accounts against rated customers are covered in full to the limit of the liability on the specified capital and credit rating of the customer.

The premium on this regular policy is usually \$50 per thousand for the amount of the policy.

The combination policy is a form of policy combining the full coverage of the first and second grade mercantile agency ratings as above indicated with what might be termed co-insurance coverage on ratings not enumerated in such table of ratings. This additional co-insurance coverage on the inferior ratings is provided by a rider attached to the regular policy. It varies in coverage according to the requirements of each individual case.

The premium on this combination policy is usually \$80 per thousand of insurance, being fixed according to the amount of the policy.

The size of the policy is usually based upon the amount of the yearly sales of the insured. The following table shows the minimum size of the policies suggested for respective sales:

Sales.	Policy.	Sales.	Policy.
\$ 75,000.....	\$3,000	\$ 400,000.....	\$10,000
100,000.....	5,000	500,000.....	12,500
150,000.....	5,000	750,000.....	15,000
200,000.....	6,000	1,000,000.....	25,000
250,000.....	7,000	1,500,000.....	30,000
300,000.....	7,500	2,000,000.....	40,000
350,000.....	8,000	Over 2,000,000.....	50,000

The insolvency clause of the policy defines the scope of the insolvency coverage, which embraces all legal forms of insolvency, national or state; also compromises, and parties execution proof.

When a debtor becomes insolvent, the insured sends a notification to the company on blanks supplied for the purpose. The insured handles his own claims against his debtors, and is, of course, required to use diligence in collecting all amounts possible upon claims covered by the policy, and in procuring their allowance against the estates of debtors in cases of bankruptcy, assignment and receiverships.

If any claim for excess loss is made under the policy, based on notifications of insolvency which shall have been given upon occurrence of individual cases of insolvency, a final statement of claim is made upon blanks furnished by the company, and an adjustment is usually made within sixty days after the receipt by the company of the final settlement, and the amount then ascertained to be due on covered proved losses becomes payable at once.

The method of adjustment is to deduct from each loss covered and proven under the policy, the amount collected from the debtors and the amounts still shown to be col-

lectible, and from the aggregate amount of the net covered and proven losses, the agreed initial loss to be borne by the insured is deducted, and the balance, not exceeding the amount of the policy, is the amount due the insured.

If the insured accepts and pays for a renewal policy, covered losses occurring under the renewal policy on sales made thereunder as well as on sales made under the policy immediately preceding, are covered under the new policy the same as though they had been shipped under the new policy.

Principal Conditions of Policy

INITIAL LOSS. The initial loss to be borne by the indemnified shall be 1 per cent. (some cases less, some more) of the total amount of the gross sales by the indemnified of merchandise shipped and delivered, during the term of this bond, in the United States and Dominion of Canada, but said percentage shall be calculated on sales of not less than \$500,000 (figures used are for illustrative purposes only), and said initial loss shall be deducted as hereinafter provided, from the aggregate amount of the net covered, proved losses ascertained in the adjustment.

COVERAGE. No loss is covered by this bond, unless the debtor to whom the goods were shipped and delivered shall have in the latest published book of the selected mercantile agency at the date of the shipment one of the ratings of the said agency, both as to capital and credit, as tabulated below.

The gross amount to be covered on any one insolvent debtor shall be limited to 30 per cent. of the lowest amount of his capital rating where the first credit rating follows, but shall also be limited to \$10,000 gross.

The gross amount to be covered on any one insolvent debtor shall be limited to 25 per cent. of the lowest amount

of his capital rating where the second credit rating follows, but shall also be limited to \$7,500 gross.

BRADSTREET MERCANTILE AGENCY RATINGS.

Credit ratings in this table are to be read only with respective capital ratings on the same line.

Capital Rating.	First Credit Rating.	Second Credit Rating.	Capital Rating.	First Credit Rating.	Second Credit Rating.
G	AA	A	Q	B	C
H	AA	A	R	B	C
J	A	B	S	C	D
K	A	B	T	C	D
L	A	B	U	C	D
M	A	B	V	D	E
N	A	B	W	D	E
O	B	C	X	D	
P	B	C			

R. G. DUN & Co. MERCANTILE AGENCY RATINGS.

Credit ratings in this table are to be read only with respective capital ratings on the same line.

Capital Rating.	First Credit Rating.	Second Credit Rating.	Capital Rating.	First Credit Rating.	Second Credit Rating.
AA	A1	1	D	1 ½	2
A+	A1	1	E	2	2 ½
A	A1	1	F	2 ½	3
B+	1	1 ½	G	3	3 ½
B	1	1 ½	H	3	3 ½
C+	1	1 ½	J	3	3 ½
C	1 ½	2	K	3 ½	
D+	1 ½	2			

If the indebtedness of any debtor at the time of insolvency is for shipments made under different governing ratings, the limits applicable to each governing rating shall apply to the shipments made under such rating but the combined gross amount to be covered on the entire indebtedness shall not exceed the limits applicable to the debtor's most favorable governing rating.

The books of said mercantile agency shall respectively govern shipments from the first day of the month named by said book to the first day of the month named by the next subsequent book, except that where said mercantile

agency increases or reduces a rating, shipments made after the indemnified has received notice that the rating has been increased or reduced shall be governed by such change.

NAMES NOT IN BOOK. A shipment to a debtor, whose name does not appear in the said latest published book at the date of the shipment, shall be governed by the rating in the latest report of said agency on such debtor compiled within four months prior to the shipment, and if no such report was compiled within four months prior to the shipment, then by the first report of said agency on such debtor compiled within four months after the shipment. Every such governing rating shall have the same effect as if contained in said latest published book at the time of shipment.

INSOLVENCY DEFINED. A debtor shall only be deemed to be insolvent for the purposes of this bond:

(1) When his assets are held in any judicial proceeding to be insufficient to pay his debts in full.

(2) When a petition in bankruptcy or insolvency is filed by or against him under the laws of the United States, or any state or territory thereof, or of Canada.

(3) When he makes a compromise of his indebtedness with a majority of his creditors in number and in amount.

(4) When he makes an assignment, or a deed of trust or a chattel mortgage conveying his stock in trade, for the benefit of his creditors in general, with or without preferences.

(5) When a writ of attachment or execution against the debtor, whether in favor of the indemnified or any other creditor, is returned unsatisfied.

(6) When his stock in trade is sold under a writ of attachment or execution.

(7) When a receiver is appointed for the debtor, and his insolvency is alleged in the application therefor.

(8) When such receiver is appointed without that

allegation, provided the receiver reports in writing, or any decree or order of court shows, that insolvency exists. (Such report shall accompany either the notification of insolvency or the final statement.)

(9) When the debtor absconds, or sells out or transfers his stock in trade in bulk, provided any mercantile agency or any attorney in active practice in the county or city in which the debtor did business, reports in writing that the claim against the debtor is not collectible. (Such report shall accompany either the notification of insolvency or the final statement.)

(10) The death or insanity of a sole debtor, provided the executor, administrator or guardian reports in writing, or any judgment or decree or order of court shows, that the estate is insufficient to pay the debts in full. (Such report or a copy of such judgment or decree or order shall accompany either the notification of insolvency or the final statement.)

(11) A debtor who owes the indemnified not more than \$150, and who has ceased to do business, provided the notification of insolvency to the company is accompanied by a report in writing from any mercantile agency or any attorney in active practice in the county or city in which the debtor did business, stating that the claim is not collectible.

NOTIFICATION OF INSOLVENCY. Notification of each insolvency under the bond must be given by the indemnified to the company upon blanks supplied by it, and must be received by it at its office, during the term of the bond, and within twenty (20) days after the indemnified shall have received information of such insolvency; otherwise the loss shall not be included in the adjustment.

But if information of an insolvency shall be received too late to enable the indemnified to notify the company during the term of the bond, then notification of such insolvency to the company within twenty (20) days after the expiration of the bond shall be sufficient.

ATTENTION TO SALVAGE. The indemnified shall endeavor to obtain all amounts possible upon claims covered by this bond, and shall use diligence in procuring their allowance against the estates of the debtors in cases of bankruptcy, assignment, receivership or other administration of insolvent estates.

FINAL STATEMENT OF CLAIM. If any claim for excess loss is made under the bond, based on notifications of insolvency which shall have been received by this company as required by Section 3, a final statement of the claim duly sworn to, shall be made by the indemnified upon blank forms which will be furnished by the company upon application, and such final statement must be received by the company at its office within thirty (30) days after the expiration of the bond; otherwise there shall be no liability under the bond.

The adjustment shall be had within sixty (60) days after the receipt by the company of such final statement and the amount then ascertained to be due on covered proved losses shall at once become payable.

ADJUSTMENT. In the adjustment there shall be deducted from each gross loss covered and proven under the bond the amounts collected thereon, the actual value of all securities and guarantees held by the indemnified or for his benefit, the amount of goods returned or replevined, and the amounts which from any other source have been obtained or shall be thereafter obtainable; provided that, if the indebtedness of the debtor to the indemnified at the time of the insolvency is not covered in full by the bond, then said deductions shall be made pro-rata, viz.: in the ratio which the amount covered bears to the whole of such indebtedness. If no mutually satisfactory agreement should be reached as to the amounts thereafter obtainable on any loss, the company shall allow the unpaid part of such loss, so far as covered, and the indemnified shall then assign to the company the claim against the debtor,

together with all securities and guarantees relating thereto, in such ratio as the amount covered on such claim bears to the whole of such claim. From the aggregate amount of the net covered and proven losses thus ascertained there shall be deducted the agreed initial loss to be borne by the indemnified, and the balance, if any, not exceeding the amount of the bond, shall be the amount due the indemnified. If the net amounts realized by the company on the claims assigned to it, as above provided, shall in the aggregate exceed the sum paid to the indemnified, the company shall refund the net excess.

Benefits

Credit insurance offers to the insured the following benefits:

It adds to a merchant's capital, at small cost, a special reserve equal to the face of the bond, to meet unexpected losses in business.

It offers collateral security upon inferior accounts, and protects against the calamities which come upon preferred customers.

It affords a guaranty that losses on merchandise sold during the year covered shall not exceed a normal, stated percentage of the gross sales.

It protects profits against impairment through unexpected and unavoidable losses.

It protects against a risk which every merchant must otherwise take.

To carry credit insurance is to complete a chain of protection in business. All work is to the end that goods may be sold. Every part of a business relies on the profits from the sales of the product. Credit insurance protects against excessive losses on the output of the business which ultimately passes, with profits added, into the shape of accounts; that part which represents the finality of the combined efforts of the entire organization. It supplies certainty for hope and uncertainty.

It is wise to insure ledger accounts representing goods which have changed to the form of book accounts and the value thus increased by the added profits. Credit insurance is the only means of continuing protection from loss on goods after title passes.

True economy justifies and requires the carrying of credit insurance. It is a most judicious use of money, the right kind of economy, to pay the premium to conserve profits, to be protected against excessive losses on total annual sales. To surrender protection on accounts that mount up in the aggregate to a large sum, simply to apparently save a little money in a premium, a mere pittance in the percentage of the sales, is not economy; it is indeed opposed to economy; it is worse—it is neglecting to provide against waste; it is an unjust assumption of responsibility without agreement of reparation in case excessive losses occur. It is an ethical as well as business duty to carry credit insurance. It is true economy.

No merchant in justice to himself, his house and his associates, should refuse to safeguard his interests, control his losses, prevent impairment of his profits, or decline to secure the best and only obtainable collateral on his merchandise accounts—credit insurance, under which, even though he never sustains a loss, he receives immense benefit by reason of its helpful influence on credits and being able to conduct business with that serenity of mind which always springs from a sense of security.

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CHAPTER LVII
FLY-WHEEL INSURANCE

By W. R. C. CORSON

ONE of the salient features of our modern civilization is the extensive use of mechanical power. All methods of transportation, manufacture, and even much of our domestic comfort is so dependent upon it that its future supply of energy has already become a vital question and a prominent argument for the conservation of our natural resources.

With mechanical power occupying so large a place in our scheme of life, it is not strange that a demand has arisen for a distribution through insurance methods of the cost of such accidents as are inherent in its operation. Fly-wheel insurance has thus come to the front in affording protection against a hazard which though long recognized as an accompaniment of power generation and transmission, has so increased in frequency and magnitude under the strenuous demands of modern practice as to justify special provisions for its underwriting.

As fly-wheel insurance deals with a mechanical hazard, and no clear comprehension of its characteristics can be had without some understanding of the nature and operation of the mechanical structures in which this hazard exists, it is desirable to review those features of power plant mechanisms which have a bearing on this subject, even at the risk of dwelling too long on matters familiar to many.

In every system for the generation of power there exists one piece of apparatus whose duty it is to produce mechanical motion from the energy supplied to it. This mechanism may be a water-wheel, a turbine, a steam or gas engine. Whatever its construction or method of

operation, if it produces mechanical motion from a source of potential energy, such a mechanism is designated in engineering language, as a "*Prime Mover*." It is well to bear this definition in mind for the term is frequently used in describing the conditions of a fly-wheel insurance risk.

Another definition with which we must become acquainted is that of the structure from which this class of insurance is named. In mechanics a fly-wheel is a wheel with a heavy rim which by virtue of its momentum tends to equalize the effect of irregular driving efforts or of driven resistances, on the rotary motion of the shaft on which it is mounted. The most common example of such a wheel is found on a reciprocating steam engine, and to obtain a more adequate idea of what a fly-wheel is and does, I propose briefly to outline its functions in connection with such a mechanism.

A steam engine consists elementarily of a fixed cylinder in which a tightly fitting piston is free to move. By a system of valves steam is admitted alternately to the spaces between the piston and each end of the cylinder, and by its pressure forces the piston to move back and forth in what we call a reciprocating motion. Now a reciprocating motion or any motion of matter in a straight line is a most inconvenient one for the transmission of mechanical energy, and so means are devised and provided in the engine for the transformation of this reciprocating motion into the more convenient rotary motion of a shaft. The mechanism which accomplishes this transformation consists of a system of rods connecting the piston to the crank of a shaft whose axis lies at right angles to that of the piston. By such connection the intermittent impulses of the latter moving back and forth in its cylinder are converted into an irregularly exerted effort to turn the shaft, the motion of which would

be quite as irregular as these impulses were it not for the assistance of the fly-wheel mounted on it.

The duty of the shaft is, of course, to transmit the power of the engine either directly or indirectly to the work for which it is required and the performance of work imposes a load on the system which appears on the shaft as a resistance to its turning. To overcome this resistance, the turning force must be equal to it at all times. We can conceive that the supply of steam admitted to the engine may be so adjusted as to furnish the necessary total energy for overcoming this resistance during one revolution of the shaft, but as this energy is imparted in impulses, there must be instants when it is in excess of that required, and others when it is insufficient. With this conception of the situation it is evident that to secure the constant turning force required, some means must be provided for storing the excess energy of these impulses for delivery to the shaft during the periods of their deficiency and in accomplishing this purpose the fly-wheel may be regarded as a temporary storage of energy, as in fact it is.

A fly-wheel is composed of matter largely concentrated in its rim and in accord with well-known physical laws, when matter is set in motion energy is absorbed, so to speak, which is given out again by it as it comes to rest. It is not necessary, however, for a wheel to actually change its condition from a complete state of rest to that of motion, or vice-versa, in order to compensate for fluctuations of the engine's impulses. Energy is absorbed by it in passing from one velocity to a higher, or given out again in dropping to a lower, and thus it is by a fluctuating velocity, that such a wheel is enabled to accomplish its purpose. But nearly all the machinery or devices utilizing mechanical power require a practically uniform velocity of rotation. It is, in general, therefore, desirable

that these fluctuations in velocity shall be as small as possible.

Now one of the laws of matter in motion is that the energy absorbed by its momentum varies as the product of its mass and the square of the velocity attained. How the average rim velocity of a wheel in accordance with this law, affects the magnitude of its fluctuations in absorbing or giving out energy may be best shown by an example.

Suppose 100 units of energy were required to produce a velocity of 10 feet per second in the rim of a wheel. In accordance with this law of squares, 121 units would be required to produce a velocity of 11 feet per second in the same wheel, a gain of 21 units of energy by a variation of 1 foot per second. If the same wheel were brought up to a velocity of 20 feet per second, the energy stored would be proportional to the square of 20 and would amount to 400 units, and at 22 feet per second, the energy would reach 484 units. At these higher speeds a change of 84 units of energy is thus attained by a variation in velocity of 2 feet per second or at the rate of 42 units of energy per unit change in velocity. Between 10 and 11 feet per second, the change in velocity was 1 foot or 10 per cent. of the initial velocity and effected a change of energy of 21 units. At double the velocity, a change of ten per cent—in this case two feet per second—affected the energy to the extent of 84 units, four times the effect of the same relative variation of speed at the lower velocities. The importance of operation at high velocities, to secure adequate compensating effects on the part of the fly-wheel, with minimum fluctuations in its velocity, is thus apparent.

In consequence of all this, fly-wheels are designed to operate at as high rim speeds as safety or other conditions will permit and are then made of sufficient weight to produce the required changes in energy by such variation

in velocity as the character of the service will allow. High velocities of fly-wheel rims accordingly are desirable from the point of view of economy of material and efficiency of operation to an extent which has brought these velocities closer and closer to the danger limit.

Now while this class of insurance has derived its name from the wheel most liable to its hazard, it is by no means limited to fly-wheels alone, but extends protection generally against the effects of accidents to revolving wheels of all kinds in power transmission systems. Wheels other than fly-wheels are used in such systems almost exclusively for the transmission of power. Whatever the type of transmission, it is a universal law that the higher the velocity at which its rim moves, the greater will be the power which a given wheel may transmit. With all classes of wheels, therefore, exists an inducement to operate at high velocities.

We have seen that any wheel in motion, because of its mass and velocity, may be regarded as a storage of energy. Now the same danger attends its storage in this form as in any other where it is retained by a mechanical structure. We know the possibilities of disaster from the energy stored in a steam boiler, or a gas holder, for instance, and its storage in the mass of a revolving wheel involves similar possibilities. The danger lies in its sudden release from control to dissipate itself in the performance of destructive work. Whenever the disruptive force of the energy stored exceeds the strength of the retaining structure, the latter gives way and the kind of accident which we call an explosion results.

In revolving wheels, the disrupting force is called centrifugal force, and the magnitude of this force is found to follow a similar mathematical law to that governing the energy stored in a moving body. In other words, it varies directly as the mass of the revolving

body and as the square of its velocity, and might be regarded, therefore, as exerted by the energy stored.

To understand the simple theory of the effects of this force on a wheel, it is customary to consider the rim as a continuous hoop or band fitted closely around the ends of the arms, much as the steel tire on a wooden wagon wheel. In this consideration of a wheel the arms are secured to the hub, but not to the rim, and consequently have but to resist the centrifugal force of the material in themselves. The rim acting in tension as a hoop has to resist the centrifugal force due to its own mass only. Now as the force tending to disrupt the rim varies as its weight, we see that any material added to the rim will increase that force in proportion to the added weight. As the total strength of the rim as a hoop in tension depends on the unit strength of the material and its sectional area, it follows for a given material that any increased strength must be obtained by an increase of that area which will be accompanied by a proportional increase in weight and, therefore, by a proportional increase of centrifugal force. The increase in the strength of a rim, therefore, by an enlargement of its dimensions, does not alter its ability to withstand the centrifugal strains to which it is subjected. Again, as centrifugal force for a given mass increases as the square of its velocity, it is apparent that for a given rim there will exist a certain velocity at which this force will exceed its strength and disruption will occur. If the ability to withstand disruption is independent of the rim dimensions as has been shown, this bursting speed as it is called must depend only on the unit weight and unit strength of its material. For instance, it can be mathematically shown that a solid cast iron rim in which the material has an ultimate tensile strength of 12,000 pounds per square inch and a unit weight of 0.26 pounds per cubic inch must certainly burst at a velocity of approximately 21,000

feet per minute, whatever its section and whatever its weight.

In a wheel of homogeneous material, of the structure we have assumed for our *theoretical consideration*, we need not consider the centrifugal force acting on the spokes, because the rim running at a higher velocity than any other portion must always be closer to the danger limit. In a wheel as actually constructed, however, the arms are cast with, or otherwise secured to the rim and form rigid ties between points on it and the hub. Under these conditions, the actual bursting speed will differ from that determined by the foregoing theory, to a greater or less extent. While a discussion of this matter is beyond the scope of the present paper, we may say in general that by tying the rim to the spokes or arms, strains are created which tend to reduce the actual speed at which disruption will occur. Generally speaking, the existence of spokes does not increase the strength of a wheel to resist centrifugal force.

The larger proportion of fly-wheels and pulleys used in power systems are made of cast iron. The ultimate strength in such castings is generally assumed to lie between 10,000 and 12,000 pounds per square inch; their weight is 0.26 pounds per cubic inch. Accordingly, solid wheels of this material are expected to burst at velocities of less than 21,000 feet per minute. Small wheels are usually cast solid, that is, with rims, arms and hub in one piece. Larger wheels, are, however, cast in two or more sections and the sections fastened at rim or hub by a bolted or other type of joint. Such a joint can never be quite as strong as the solid metal, and often because of its weight, imposes additional strains on the rim. Disregarding the latter feature, the rim's ability to resist disruption must be reduced in the ratio which the strength of the joint bears to the strength of a solid section. For example, suppose a rim joint had a strength

equal to 25 per cent. of the strength of the solid rim. The rim's ability to resist centrifugal force would be no greater than that of its weakest part, namely, the joint. In this case, the resistance to disruption would be but 25 per cent. of that of a similar solid rim, while its weight would be practically the same. In consequence, and because centrifugal force varies as the square of the velocity, that required to burst the joint would be attained at a velocity one-half that required to burst a solid wheel. For such a wheel, therefore, disruption would be expected at a velocity less than 11,000 feet per minute.

Steel, wood and paper pulleys of comparatively small sizes are also made and used to some extent and because of the relation of unit strength to unit weight of these materials have higher bursting rim velocities than those of cast iron. Solid cast steel wheels of a tensile strength of 50,000 pounds per square inch or four times that assumed for cast iron and of approximately the same unit weight should reach velocities of over 40,000 feet per minute before bursting.

As I have suggested, the purposes of power generation and transmission systems, especially those with which fly-wheel insurance is interested, generally require operation at a nearly constant uniform speed of rotation. The fly-wheel assists in this by equalizing the irregular impulses of a reciprocating prime-mover, but the prime-mover itself must be equipped to control the velocity by means which will insure an adequate and only an adequate average supply of energy for the demands of the work at that velocity. The device which regulates the supply of energy to the demands for it, is called a governor, and all prime-movers in a constant speed power system are equipped with such a device. If the governor were to permit a supply of energy in excess of that required at the selected speed, the excess would be largely absorbed in the acceleration of the revolving masses. If

the excess supply were continued, a bursting speed would eventually be reached and disaster occur. The responsibility for maintaining safe speeds of rotation and consequently of linear rim velocities of all wheels depending on a particular prime-mover, lies with its governor.

Now because centrifugal force follows the law of squares in its variation with the velocity of the revolving body, it happens frequently that a comparatively small difference exists between the so-called safe speed of normal operation and the theoretical speed at which disruption is expected. Take our previous example of a solid cast iron wheel with an ultimate strength of material of 12,000 pounds per square inch. It was shown that such a wheel should burst at a rim velocity of about 21,000 feet per minute. Assuming a factor of safety of ten, a strain of 1,200 pounds per square inch would be allowable and such a strain would be produced at a velocity of a little over 6,600 feet per minute. Thus a wheel with a factor of safety of ten so far as its normal strains are concerned has a factor of safety of but the square root of ten or a little over three in speed. A rim velocity of 5,000 feet per minute—about a mile a minute—was formerly considered the limit of safe normal operation. The demands for close regulation of speed, however, have tempted beyond this in modern practice and it is not uncommon to find wheels, whose rim joints are but half as strong as the solid section, running at over 6,000 feet per minute, thus having a speed factor of safety of much less than three. With such small margins between normal and dangerous velocities, the responsibility imposed on the governor is great, and the failure of this device to properly control the speed is the cause of a majority of the accidents for which fly-wheel insurance pays the bills.

Not all accidents of the kind insured against, however, are due to excessive speed. Loosened bolts in a joint or



a weakness in the metal itself may cause disaster at otherwise normal operation. The admission of water into the cylinder of a steam engine is always attended by the possibilities of danger—among them that the piston and the shaft to which it is connected may be suddenly brought to a stop, while the heavy rim of the fly-wheel continues in motion. A similar result may be caused by an obstruction to its motion falling into the wheel and tearing its arms from rim or hub. These are but a few of the accidents which may and do befall the complicated mechanism of power machinery to cause the release of the stored energy in a wheel for the destruction of property and the endangering of life or limb.

The extent of disaster resulting from an accident at normal velocity, other conditions being equal should, however, be much smaller than that of one occurring at bursting speed, because of the relative amounts of energy stored. If at normal operation the centrifugal strains are but one-tenth of the ultimate strength, the possibilities of damage are ten times greater in the event of failure of the governing devices than for any cause of disruption at normal speed. Considerations along this line will also lead to the conclusion that of a given material wheels which because of joint strength or other structural weakness should burst at a low velocity contain less power for damage than those of stronger construction. From this point of view, weakness of construction may be argued a condition favorable to a fly-wheel risk.

Now fly-wheel insurance has one feature in common with life insurance, namely, the selection of risks. But the newer insurance goes a step farther than the old and not only determines the physical condition of the risk before underwriting it, but also makes periodic examinations to see that it is maintained in insurable condition. All this, of course, requires the services of men who are skilled in mechanical matters and are especially familiar

with the construction, purpose and operation of the various appliances which compose a power generating or transmission system. In addition to these qualifications, the inspector of fly-wheel risks must have a knowledge of the weaknesses and defects to which such apparatus is liable and of the conditions which render its operation hazardous. In his preliminary visit to a plant he examines not only the structure of the wheels to be insured, but the entire circumstances of their purpose, of their location, of their support and of their driving mechanism. He tests the material for weaknesses, examines belts, nuts, keys, etc., to see that they are tight, and governors, relief valves and other safety devices, that they are in condition to perform their several functions. He notes the general condition of the plant, as evidence of the character of its care and management, and records the result of his inspection with his recommendations in a report made to his company. If the latter is satisfied from this report that the risk is normal, a policy is issued. If, on the other hand, it finds conditions which it believes abnormally hazardous, it points these out to the owner and shows him how they may be improved.

Once insured, the wheels and the power appliances connected with them become the objects of periodic inspections of like character to the first, and the conditions disclosed are included in a report to the assured as well as the company.

An inspection service of this character made by competent men should be and is appreciated by owners of power plants as of greater benefit than the indemnity afforded by the policy. No matter how capable the man employed as engineer or superintendent in charge, details endangering operation may escape him which will at once attract the notice of an inspector whose principal business it is to look for faults and who from an exper-

ience in many plants knows where to look for them.

The insurance offered by the several companies affords indemnity for the loss or damage which the assured may sustain as a result of an accident of the class contemplated. Protection under a policy of this kind covers all damage to property either the assured's or that of others for which he may be liable, and if desired also, the assured's liability for death or personal injury resulting from the accident. A particular class of accident is contemplated and as suddenness and violence are characteristic of it, words expressing these qualities, such as "explosion," "bursting" and "disruption" are used in the insuring clause of policies in describing the hazard assumed and to further prevent any misconception of its nature the words "while revolving" or similar expression is usually inserted to limit the condition of the wheel to that under which such hazard is possible.

The insuring company assumes the risk on the basis of the conditions disclosed by inspection. Most important among these is the speed at which the various wheels are operated. As it is easily possible to change the speed and consequently affect the hazard, all policies record the velocity approved for the respective wheels insured and provide that no liability shall attach to the insurance company from any accident to a wheel while the governor controlling it is adjusted for a higher one.

The method of determining premium rates differs to some extent with the several companies. All, however, recognize that the cost of inspection is a large factor in the case, and that this service must necessarily extend to the prime-mover which is responsible for the speed of the wheels driven by it. While a failure of such apparatus is not a peril insured against by a fly-wheel policy, the existence of the prime-mover and its inspection must be provided for in the premium. To allow for this a greater rate is charged for a wheel mounted on an engine, water

wheel, etc., than for those which on other shafts are driven by it. Usually the wheel of largest diameter on the prime-mover is termed an "engine wheel" and takes the full rate, while subsequent wheels in the same driven system, whether on the prime-mover or on some other shaft are termed "shaft wheels" or "pulleys" and are covered at less than full rate.

On the theory that the weight and destructive power of a wheel will increase with its diameter, rate tables are made to vary with the diameter also. A few tables take into consideration the speed of normal operation, increasing the rate not only with the size of the wheel, but also slightly with the speed. The latter system is arranged in an effort to provide for the greater hazard of the higher velocities.

Some attempt has been made to classify the hazard by industries, but the statistics thus far obtained are insufficient as a basis for such classification.

The Fidelity and Casualty Company of New York was, I believe, the first company in the country to offer this class of insurance and that company is, therefore, entitled to the credit afforded pioneers in any line of endeavor. It began writing fly-wheel insurance in 1901, but not until the year 1906 was any record published of the encouragement it received from premiums collected. In that year, however, data of fly-wheel insurance was required as an exhibit in annual reports, and receipts, losses, etc., became a matter of public record. The Fidelity and Casualty Company, according to this record, was still, in 1906, the only company writing this line, and reported a total of premiums collected of \$61,766, and losses paid to the amount of \$16,379. In spite of a loss ratio of over 26 per cent. thus indicated—a high ratio when expense of inspection and management must be added—a second company reported fly-wheel business in 1907, and since then each succeeding year has shown

additions to the number in the field. In 1910 eight companies reported premiums received from this source in amount \$172,814.

This rapid growth of the business indicates both a realization by power users of the hazard involved in the operation of heavy wheels and an appreciation of the opportunity to shift the risk to an insurance company.

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CHAPTER LVIII

LLOYDS

BY RUSHTON PEABODY

PROBABLY one of the greatest business organizations of the modern world is that known as "Lloyds" of London, and certainly no other business ever so extended its ramifications to all corners of the earth. It is true, also, that no great business enterprise ever had its origin in a smaller beginning.

The name of this great institution is derived from Edward Lloyd, who in the seventeenth century conducted a small tavern or coffee house on Tower Street in the City of London. The first mention of the name of Edward Lloyd is in an advertisement in the London Gazette in 1688 in which he offered a reward of one guinea, payable at his Tower Street coffee house, for information that would lead to the arrest of "A middle sized man, having black curled hair and pock holes on his face for having stolen a number of watches." In Edward Lloyd's coffee house, over which in imagination we may see him presiding with white apron and cap, the colossal business which today probably reaches an annual aggregate of hundreds of millions of pounds, had its inception.

In the early days Lloyd's coffee house became the meeting place of London merchants engaged in shipping or foreign trade, and, for the accommodation of his patrons, Lloyd appears to have made it a part of his business to collect and distribute to them all the available news regarding shipping and the business carried on in ships; and so it happened that, in the course of time, Lloyd's patrons, finding his information trustworthy, got into the way of relying upon it in the underwriting of insurance upon ships and cargoes.

In 1692 Lloyd moved his coffee house from Tower Street to Lombard Street and there, in 1696, he began the publication of "Lloyd's News," which contained information upon a great variety of subjects, but particularly that relating to shipping. "Lloyd's News" had but a brief existence as Lloyd soon became involved in trouble with the House of Lords owing to a publication that appeared in the columns of his paper, and after six months he was, in consequence, obliged to suspend publication; and with that, so far as history is concerned, Lloyd disappeared from view.

After twenty-five years, however, in 1721, publication was resumed by his successor as "Lloyd's List" and without interruption has continued to the present time. It is now known throughout the world as "Lloyd's Register of Shipping."

During the early history of Lloyds the merchants and underwriters frequenting the place were not organized or associated in any form, each particular project receiving the endorsement of those who happened to favor it and no security was available but the individual credit of the underwriters.

During the eighteenth century and early in the nineteenth much criticism was heard of the character of the business carried on at Lloyds, its critics denouncing it as illicit gambling. Throughout its whole history, however, Lloyds underwriters have repudiated any such reflection upon their operations and have strenuously insisted that in all its phases, its business was as legitimate and honest as any other. It was in 1774 that the underwriters and brokers, calling themselves "The New Lloyds," settled down in the Royal Exchange, and at about this time printed policies of insurance were first made uniform. The policy then adopted, is, in all substantial particulars, identical with the policy today issued by Lloyds.

In 1810 Lloyds was subjected to a searching investiga-

tion by parliament, and in 1811 was reorganized and started upon its modern career. The association, however, was not incorporated by act of parliament until 1871 and then for the first time the nature of its business was definitely stated and systematized. The objects of the corporation, according to its charter, are the carrying out of marine insurance, the protection of the interests of members of the association and the collection, publication and diffusion of intelligence and information with respect to shipping. At this time, too, the society or corporation greatly enlarged that branch of its business consisting of the publication of shipping news and gave the name of "Lloyd's Register of British and Foreign Shipping" to its medium of publication. Every ship in the world, upwards of 100,000 in number, recorded in the Index is carefully kept under supervision and the varying phases of its fortunes are reported in the Register. Every port of the world is constantly under observation by one of Lloyds agents, who are invariably men of high character and experience in the business. No new ship is constructed, registration of which is desired at Lloyds, that is not supervised in process of construction by a representative of Lloyds learned in the art of shipbuilding and, not infrequently, plans and specifications are varied in order to conform to the exactions of Lloyds' managers. To be classed as "A 1" by Lloyds, ample assurance must be given that the ship is in every respect an A 1 risk and to be A 1 in Lloyds Register is to be a desirable risk by any marine insurance in any country of the world. On the other hand, to be "A 1 at Lloyds," signifies that it would be well for the prospective underwriter to make inquiries at Lloyds before assuming any liability, and there information, available to members only and of a confidential character, may be had in the most detailed form.

Strictly speaking, Lloyds is not an insurance company.

It corresponds, rather, in the shipping trade to Dun and Bradstreet Mercantile Agencies in general business. Lloyds classifies and rates ships, as Dun and Bradstreet classify and rate merchants; and it is upon Lloyds ratings that its members and marine insurance companies generally base their judgment as to the character of the risk, just as upon Dun and Bradstreet reports merchants base their judgment of the credit of prospective customers.

There are about 2,500 members of Lloyds, variously classified. There are subscribers who pay \$25 a year and have a right to the information disseminated by Lloyds through its Register, but have no voice in the management of the Association; non-underwriting members who pay an entrance fee of \$60, and are entitled to somewhat larger privileges than the former class; and underwriting members, who pay an entrance fee of \$500. Underwriting members must also deposit securities of the value of from \$25,000 to \$50,000 in the hands of the trustees as part security for the liabilities assumed by them; and this is by no means all of the security available for the payment of claims, as each underwriter is further liable to the extent of his entire private fortune for the amount of the risk individually assumed by him. Not all of the underwriting members are in attendance at Lloyds. They have arranged themselves into syndicates and act through representatives present in the underwriters' room. These syndicates consist only of men of large financial responsibility and have been known to assume liabilities amounting to as much as \$200,000,000 in the aggregate.

It will thus be seen that the method of carrying on the business of insurance at Lloyds is very different from that of marine insurance corporations in the United States. Here incorporation is necessary, deposits with state officials are required, taxation is imposed and the

whole process of insurance in its infinite details is regulated by statutory law and carried on under state supervision.

Lloyds comparative freedom from regulation and expense makes Lloyds a most formidable competitor of incorporated marine insurance companies in the United States and other countries; but all such business everywhere is dependent upon Lloyds Register as practically the only comprehensive available source of information regarding ships and their ratings, particularly British ships.

The method of doing business at Lloyds is very simple, but very different from the methods of insurance companies. When insurance is desired upon any particular ship, a broker calls at the underwriters' room of the association with a memorandum showing name of ship and of its master, the nature of the voyage, the subject or subjects to be insured and their value, and passes from desk to desk of the underwriters, or syndicates of underwriters, until the whole amount desired is secured. If the vessel is rated "A 1" and the master has a corresponding standing, and all other features are satisfactory, the risk is speedily subscribed, each underwriter's separate liability being definitely stated in the policy. There is no joint liability among the underwriters, each underwriter and his heirs being responsible only for the amount of risk specifically assumed and the aggregate of the several liabilities constitutes the sum total of the insurance.

Not only, as stated, does Lloyds keep a record of the career of each ship in commission, but also has, available to members, authentic biographies of every ship master in command of a vessel. His whole career is summarized, every instance of notable seamanship is recorded and every unfortunate or unseamanlike experience is set down to his detriment. Inasmuch, then, as the insur-

ance rate depends as largely upon the seamanship and character of the master as upon the vessel itself, owners of vessels find it materially to their advantage to procure the services only of those masters who are known to be efficient and reliable. It may be incidentally remarked that this feature of Lloyds business constitutes a kind of guarantee to every person contemplating a sea voyage that the master of the ship, upon whose skill as a navigator and executor his life depends, has passed the scrutiny of the zealous agents of Lloyds.

Not the least of Lloyds service to the cause of honest business and the protection of the shipping industry is its relentless ferreting out, running down and prosecution of any fraud in connection therewith. Prior to Lloyds activity along this line, it was not a difficult matter for a scoundrel engaged, or pretending to be engaged, in the business of shipping, to make unlawful gain by wanton destruction of his ship. To charter a ship, load her with merchandise, to a greater or less extent bogus, send her to sea and scuttle her, was a comparatively easy thing before the dread of Lloyds prosecution, never halting and never compromising, confronted the would-be perpetrator of such crimes; but, thanks to the agency of Lloyds, this particular form of crime has been driven from the seas.

It will thus be seen that many indirect benefits have resulted to the world at large from the marvelous thoroughness and efficiency with which the management of Lloyds carries on its operations.

It has often been said that the English people are a nation of tradesmen, hard-headed, practical, mercenary, unsentimental, but it is also true that there is no nation in the world so conservative of old customs and institutions and so appreciative of matters of sentiment as the English people. An illustration of British conservatism is found in a custom extant today in the British parliament. Hundreds of years ago, when the houses of parlia-

ment were separated by a considerable intervening space from the main city, it was frequently a matter of no small risk to journey from Westminster to London, the way being a favorite place for the operations of bold highway-men; so that, when a member desired to return to the city, it was customary for him to withdraw from the house and at the threshold shout out in a loud voice, "Who's going home?" in order to form a little company of those returning to the city and thereby secure a safe journey. And to this day, notwithstanding the fact that parliament may be said to be geographically placed not far from the centre of the great metropolis, from time to time some member of parliament will separate himself from the body of the house of commons and shout in a loud voice, "Who's going home?" the purpose being merely to perpetuate a custom that once had a meaning and a value.

That the managers of Lloyds are not without appreciation of sentimental things will be seen from their recovery and use of the great bell of the ship *Lutine*. In 1791 the *Lutine*, a French warship captured by Admiral Duncan and added to the British navy, and subsequently of the merchant marine of the kingdom, on her way to Hamburg with a large cargo of merchandise, gold and bullion, sank with all on board save one. Sixty years afterwards Lloyds undertook to recover what they might of her precious cargo. As a result of their endeavor, \$110,000 was recovered as well as the ship's bell, which bore the Royal Arms of England and the arms of Bourbon of France, and the ship's rudder. From the rudder Lloyds made a great arm chair and a table which are to be seen in the underwriters' room, and the bell is today used to precede announcements of news, good or bad, as the case may be, regarding a ship which is in real or supposed danger. The announcer of such news takes his place on a little platform under the bell that for sixty years rested on the ocean's bed, and, when attention has



been attracted by its vibrations, in a loud voice gives out his news, that may rejoice the hearts of those whose loved ones are on board and bring gratification to the financial interests involved, or cause loving hearts to contract and shudder and rich men to sit down with pencil and paper to figure out their losses.

While the insurance of ships and cargoes is the only official business done by members of Lloyds, there is hardly any conceivable risk that, as individuals, they do not from time to time underwrite. They insure against rain, and under such a policy a provider of holiday entertainment may insure against loss by rain. The payment of a premium of \$3.75 a week will provide insurance of \$30 a week that in no two successive days the rainfall will exceed two-tenths of an inch. One of the largest liabilities assumed for the benefit of those looking to profit from a gala occasion was that which arose out of the insurance of the good health of Edward VII up to a time stated, that would carry him past the ceremonies of his coronation. Many millions of pounds were invested in features pertaining to that holiday occasion, and merchants, speculators and others procured insurance at Lloyds which protected them against the postponement of the coronation. Unfortunately for the venturesome Lloyds underwriters, the interposition of providence caused the indisposition of the king and the consequent postponement of his coronation. The king speedily recovered from his slight attack of illness, but it was costly to the members of Lloyds.

Burglary insurance is one of the ordinary risks assumed at Lloyds and the threat and fear of blackhand outrages appear to be regarded as a no more hazardous risk than burglary. The newspapers recently announced Mrs. Maldwin Drummond's loss of jewelry valued at upwards of \$100,000, but it is improbable that Mrs. Drummond lost any sleep because of the theft, as she had wisely

taken the precaution to fully insure against such a contingency with Lloyds, who, upon the announcement of the theft, deposited \$5,000 with the Pinkerton Detective Agency as reward for the recovery of a pearl necklace, two diamond rings, two diamond earrings and a brooch set with black pearls and diamonds stolen from Mrs. Drummond's stateroom.

It would seem that to some prospective parents the possibility of twins or triplets is a danger to be anticipated and reckoned with and such perturbation of spirit may be assuaged at Lloyds. The possibility of additions to the family in groups, so to speak, is a risk gladly assumed by underwriters, one of whom has professed a willingness to place insurance for the benefit of any one standing in dread of twins or triplets at the rate of one thousand to one. In at least one case a policy of insurance against the kidnapping of a baby was underwritten by Lloyds, the baby being the grandson of John R. McLane and the late Thomas F. Walsh and heir to many millions of dollars.

One of the most amusing policies ever issued by Lloyds was that known as the mother-in-law policy. A group of Lloyds members who have for years made a specialty of insurance against domestic calamities underwrote a policy for £20,000 that a man would not lay violent hands upon his mother-in-law. Why it was worth so much to this irascible gentleman to keep his temper and abstain from physical maltreatment of the estimable lady whose daughter he had espoused, is explained in this way: The insured was a beneficiary in the will of his mother-in-law for £25,000, but the bequest was contingent upon her complete immunity from personal injury at his hands. It would seem that such a provision by a mother-in-law would in itself have a tendency to calm the irritability and aggressiveness of the most quick-tempered individual, and it was upon such an assumption that a syn-

dicate of Lloyds underwriters was willing to risk its money. Knowing the provision for his benefit in his mother-in-law's will the gentleman desired to realize upon it during her life time, but the qualifying clause seemed to constitute an insuperable obstacle, as no money lender was willing to take the risk of the lapsing of the legacy through assault and battery by the legatee upon the kindly disposed testatrix. If he could give suitable guarantee that the provision for his benefit in the will would not be revoked for that cause, a money lender was willing to advance £20,000. At Lloyds the guarantee was forthcoming and the money lender procured a policy for £20,000 insuring him against lack of self-control on the part of his debtor that should cause a loss of the legacy. The lady thus enjoyed a kind of double guarantee of immunity from physical injury at the hands of her son-in-law, he anticipated her kindly testamentary provision, the money lender got a handsome thing out of it and Lloyds underwriters obtained a generous premium for their extraordinary confidence.

For a generation or more Lloyds has carried insurance in favor of a merchant in Trafalgar Square against the collapse of the Nelson Monument and the destruction of his place of business thereby; and it is said that in the presidential election of 1904 one of Mr. Roosevelt's enthusiastic supporters having wagered \$8,000 upon his election, which he believed a sure thing in the event of Mr. Roosevelt surviving election day, took out a Lloyds policy for \$8,000 upon the life of Mr. Roosevelt until after the election.

Besides its marvelous efficiency as a business instrumentality, Lloyds has its patriotic and beneficent side. The first life boat service which was subsequently adopted by all civilized countries was established by Lloyds and it was Lloyds who figured for \$10,000 at the head of the subscription list for the first life boat ever

launched. Indeed, for a quarter of a century the only life boat service in the United Kingdom was maintained by Lloyds until it was taken over by the National Life Boat Association. It was Lloyds, too, which originated as far back as 1803, by a subscription of \$100,000, the patriotic fund, still in existence, which has for a hundred years or more provided for the welfare of widows and orphans of those who had lost their lives in the naval and military service of their country and cared for the men who had crippled themselves fighting the nation's battles.

The introduction and general marine use of the wireless telegraphy has had an astounding effect upon shipping and very materially diminished the risks. Any ship in distress having wireless apparatus on board may summon to its aid every vessel similarly equipped anywhere within a radius of hundreds of miles and thus effect a saving of human life that would otherwise be appallingly sacrificed. Doubtless as wireless telegraphy is further perfected, marine insurance will still further diminish in cost and human life will have a correspondingly increased protection.

It was the boast of the haughty Roman that "While stands the Coliseum, Rome shall stand; when falls the Coliseum, Rome shall fall, and when Rome falls, the world." The Coliseum fell, and Rome fell, and the world passed through centuries of barbarism.

Words of such import cannot in sober truth be applied to Lloyds, but, in all truth and soberness, may it be said that, while stands Lloyds, England will continue to dominate the world's merchant marine, even as through her mighty navy Britannia rules the waves; and while stands Lloyds, the world's shipping must needs be carried on honestly and efficiently and those who, in increasing numbers, go down to the sea in ships will enjoy a growing measure of security and comfort.



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CHAPTER LIX
PLATE GLASS INSURANCE

BY NELSON D. STERLING

THE successful underwriting of plate glass risks is based upon three fundamental principles:

Firstly, the knowledge of conditions that exist locally.

Secondly, the care in selection of risk which carries the minimum cost of loss adjustment, which is determined primarily by the area of the glass, and

Thirdly, the close proximity of the risk to the source of glass supply.

The local conditions such as character of people frequenting the given district, the police protection, the boy element, the latter being responsible for 75 per cent. of losses, the nature of tenancy, the condition of frames, the height of glass above the sidewalk, the frequency of loss in the vicinity, and general street exposure, must be carefully considered to produce profit in this class of insurance.

The second principle enunciated is the selection of risk as regards the size of plates.

The premium prescribed in the manual of rates hereinafter referred to on plates of an area greater than 120 square feet is entirely out of proportion to the premium for plates of fifty square feet, hence every effort should be directed to contract insurance on plates of the least possible area.

The cost of replacement for plates of fifty square feet when height and width are of equal dimension or plates that contain 216 united inches (being the sum of the height and width in inches) in small communities carries a special freightage charge, sometimes amounting to

\$95, commonly known as flat car charges, and, therefore, as stated before, every care should be exercised to confine the selection of risk to store fronts containing plates that bear the minimum cost of replacement.

The presence of a warehouse in a city enables a greater latitude of underwriting judgment than would obtain in considering a risk in a town where the local dealer carries no stock of glass and has necessarily to ship the glass from some distant supply centre to make the replacement.

It, therefore, should be remembered that in remote towns where, for instance, the population is 1,000 or less that the glazing facilities are very meagre and not only would the glass have to be shipped but in all likelihood competent glaziers would have to be sent to perform the glazing work entailing considerable additional expense.

The principal class of risk of course is the store front, and in all towns where any commercial development has taken place, there is sure to be found opportunity to secure this type of insurance, and where adequate glazing facilities obtain within a small radius, proves to be the most profitable. There is little or no street exposure, the plates as a rule are of small dimension, the storekeeper is directly concerned in the management and care of the premises, and the infrequent change of window dressing all contribute to lessen the possibility of breakage, making, as stated before, the small town risk a desirable one to assume. When we speak of small towns in this instance we have reference to those exceeding the population of 1,000.

The liability in plate glass insurance can be fixed to a degree of exactitude that is foreign to almost every other form of indemnity inasmuch as the element of depreciation in value does not enter into consideration. The loss is adjusted by substituting the damaged property with that of equal quality and value to the assured, when

replacement is made, and when cash settlement is resorted to, the basis of the adjustment is the amount it would have cost the company insuring to replace.

The Premium Manual

The method of arriving at the premium of the given risk is a simple one as the same is provided in a standard manual used by all plate glass insurance companies.

Each size of glass manufactured has a specific premium. Where plates are of odd or fractional dimension the next even dimension is the basis of the premium charge. As an illustration, a plate 78 x 100 carries a premium of \$3.02, so would a plate 77 x 99.

The manual figures were arrived at by calculating a certain percentage upon a manufacturer's price list.

The basis rate of the manual contemplates the insurance of all the plates contained in a store front, hence, if the assured selects the most exposed plates for insurance and carries his own risk upon the lesser exposed, theoretically he should pay a higher percentage of rate, but the competitive conditions extant necessitate the underwriter either declining the risk or accepting the same at rate prescribed in the manual.

The premium book figures are for plates contained in the exterior part of the building within the area of the grade floor or basement.

The several classes of insurable risks are provided for by differentials according to their special type and location.

Glass above the grade floor being more remote to street hazard, is given a large percentage of discount from the manual figures, while outside show cases because of maximum street hazard carry a much higher rate than store front glass.

The manual contains instructions as to method of surveying glass for insurance by requiring that three-

quarters of an inch be added to the daylight measurement, viz.: the glass visible from sash to sash on the width and the same on the height.

This is done to have a uniform method of surveying among the companies. The depth of the rabbet (the groove in which the glass is set) may vary from one-half inch to one inch, and very often it is impossible to determine it exactly, hence the method described.

Terminology

Front Plates	Main windows of a store
Return Plates	Side windows at entrance.
End Plates	Narrow plates at end of main window.
Transom Plates	Plate above door.
Top Plates	Plates above fronts, returns and ends.
Art Glass	Colored or stained glass set in lead.
Awning Glass	Canopy of glass attached to building and extending toward curb line.
Basement Glass	Plates set in frames below level of sidewalk.
Bent Glass	Plate having a curved surface.
Commercial Risk	One in which a mercantile business is conducted.
Canopy Glass	Same as Awning.
Cathedral Glass	Same as Art glass.
Colonial Glass	Pressed glass.
Double thick glass	A quality of glass brittle in character and much thinner than plate glass.
Florentine Glass	Pressed glass.
Glued Glass	Plates joined together with an adhesive substance.
Inside Glass	Plates within the outer doors of a building.
Leaded Glass	Same as Art glass.
Memorial Windows	Composed of Art or Cathedral glass.
Prism Glass	Scientifically prepared glass intended to conduct rays of light to the interior of a building.
Ribbed Glass	Plates having a ribbed surface.
Rough Glass	Unpolished plate glass.
Sheet Glass	Same as double thick glass.
Table tops	Plate glass used to protect tables from defacement.
Wall Cases	Show cases permanently attached to the walls.
Wired Glass	Plates, polished or unpolished, in which has been moulded a wire mesh.

Loss Adjustment

The degree of economy that can be effected in the adjustment of losses is dependent entirely upon the con-

tract negotiated with the warehouses in large centers for general replacements, and procurement of competitive bids from local dealers in small towns.

There are two methods of adjusting losses in plate glass insurance when replacement of the glass broken is to be made. If more than one local dealer can be found in the town, a bid should be procured from each one covering the cost of replacing new plate, and allowance for salvage, and a second bid from each one covering the labor charges in event of the new glass being shipped by the company.

It is often found that because of favorable contracts with large warehouses, that the glass can be delivered in small towns at a cheaper price to the company than would be charged by the local dealer, and when the difference is of sufficient amount the dealer should be engaged to perform the setting work, and either buy the salvage for his own use, or pack the same in the box in which the glass has been shipped and ship the same to the original dealer, who will in turn give credit allowance, less freightage, for the salvage plate.

There are many occasions when plates are very slightly broken, such as a crack from frame to frame in one of the corners or that a stone break can be circled with a diamond to prevent extension of the vents, and it is often possible to prevail upon the assured to consent to a deferred replacement.

This latter arrangement often leads to the continuance of the insurance with the company, as the adjustment of the loss being deferred makes it desirable that the assured should continue to be insured by the company.

The surveying of glass for replacement should be performed by a competent surveyor, as in the event of the glass being measured short of the proper setting size, not only a delay occurs in the replacement of the plate, but the light that had been delivered at the premises of

necessity must be returned to stock and the glaziers will charge for loss in cutting, and in some cases a special charge for loss of time.

In towns where the agent is not competent to determine the exact setting size, the matter should be left to the local dealer who makes the bid, as then in case of mis-measurement the responsibility for the mistake can be thrown upon the glazier himself.

In large cities it is possible to negotiate contracts for replacement of all breakages upon a stable basis, and it is obvious that the patronizing of one warehouse leads to an advantage in service, and promptness of replacement that cannot be obtained if the business is distributed to several concerns.

If a small town should be within a narrow radius of a large glazing center, replacements can be made at a cheaper price than that quoted by the local dealer by employing the services of the dealer from such large center to make replacement.

Clamped Store Front Glass

This type of setting has become quite common in the construction of store fronts, and while the risk as far as street hazard is about the same as when the glass is set in wood or metal frames, yet there is the extra exposure through the fact that the edges of the glass are exposed and, therefore more apt to come in contact with different causes of breakage than would obtain were they protected by wood frames.

The necessity of the holes being drilled at the proper angle, the insertion of the cement filling between the plates, and the proper adjustment of the clamps are factors that have to be given very careful attention in the survey of the risk.

There is an additional cost in glazing plates set in this

manner that increases the amount of loss to a considerable extent.

The labor that is employed to make replacement of plates in wood frames is not found to be as expert in the replacement of plates set by clamps, and, therefore, in small towns while a plate may be replaced by the local dealer and the company assumes liability on the replaced plate, there is the possibility that the risk then assumed is not as desirable as when the glass was set by the patent manufacturers in the first instance.

This all leads to the conclusion that in the acceptance of liability on risks of this kind, a very careful survey should be made to determine that the plates are properly set, and that no strain is apparent on the point where the two plates are joined together at the clamp.

Large Plates—Upper Floors

Very often plates of large dimension are set in the lofts of buildings before the grade floor glass is set, affording an opportunity to carry the glass into the interior of the building which cannot be accomplished when construction is completed, and, therefore, if a loss occurs the glazier may either have to erect a scaffolding to set the plate from the outside or hoist the glass by block and tackle to the proper elevation.

This feature should be considered in passing upon risks of this type, always ascertaining if the hallway is large enough to permit of carrying the plate to the floor where it is to be set.

Glaziers charge special labor for such replacement and calculate a charge for the risk involved.

The installing of large plates in sub-basements is a factor in large building construction at present, and the accommodation for replacement should be considered in contemplating the insurance of such risks—not so much

the adequacy of premium charge as the difficulty of replacement in case of loss.

Glass Set in Iron Frames

In store front risks it is very essential that the plates be set on wood or rubber blocks within the frame to avoid the possibility of breakage from atmospheric changes.

Plates are very frequently set in doors with a portion of the plate cut out to admit the lock in the door. Loss is very frequent to plates set in this manner, the cracks generally extending from the corner of the lock across the face of the plate, and due largely to vibration in the opening and closing of the door.

Dwellings

The principal cause of loss in private residence risks is carelessness of servants in cleaning, defective window cords, warping of frames, and in apartments while the same hazards attend the risk, the vestibule door glass is much more subject to breakage because of the greater frequency of use of the entrance.

One redeeming feature of a dwelling risk is the small dimension of the plates and consequently small amount of loss.

The average dwelling contains "double thick" glass in the windows, which, being a grade of sheet glass, is much more subject to breakage because of its brittle character and, therefore, it is seldom that more than the vestibule doors are insurable, and the policy should be issued to cover only such plates.

The mirror risk in a dwelling is a safe one to assume.

China closets and bric-a-brac cabinets should be declined for obvious reasons.

Cathedral window glass in dwelling is a desirable risk because of the care ordinarily exercised in preserving it intact, and secondly, because it is usually set in a station-

ary frame and not subject to the same hazard as found in a plain plate window.

Show Cases

This is a type of risk that carries a heavy loss ratio because of its peculiar exposure.

The careful underwriter will not accept insurance thereon except as an accommodation line and then only when accompanied by insurance of the store front of the building in which the cases are located.

The plate glass insurance companies have not yet collated data to determine the adequate premium to produce profit, and even in such event it is questionable if the owner of the cases would pay the necessary rate.

Some of the hazards that obtain are—the cash carrier system in dry goods stores, the opening of cigar boxes in cigar stores due to pressure upon the top plate, the stocking of shelves with heavy weight displays in clothing stores bringing a strain upon the top and side plates, the usual bottle display placed upon the tops of cases in drug stores, the sliding of ice cakes in butcher shop cases, and the tray displays in confectionery stores that are usually placed upon the top plates also on the shelves within. Many plates are broken in cases which are lighted by electricity, due to cold metallic substances coming in contact therewith.

The constructive hazard, as it might be termed, is an other feature that must be carefully considered.

Many cases are now being manufactured of the frameless style which carry a special cost of replacement because of the type of construction. The plates have to be polished on the edges, which charge does not occur in replacement of plates set in nickel or wood frames, they have to be hole drilled in order to attach to the adjoining plate, and unless the holes are drilled to the accuracy of

an infinitesimal degree, the breakage of the replaced plate is most likely to ensue from strain.

There are show cases where the plates are cemented together with specially patented cement that when loss occurs necessitates the employment of the patentee to make replacement with consequent charge entirely out of proportion to the work performed.

Very often in small towns while there may be glaziers found to replace store front plates, they will seldom attempt the replacement of patent show case plates, necessitating either the shipment of the case to a distant point for repairs or the employment of expert labor to go to the premises.

Outside show cases are peculiarly exposed to street hazards because of being generally located beyond the building line. Also they are subject to burglarious entry if the display is left in the case over night. Many such cases are subject to loss through violent wind storms, etc.

The same discrimination should be exercised in the underwriting of outside cases as is employed in inside cases.

One feature that increases the loss cost in this class of risk is that it is very seldom that the company derives any salvage rebate. Nearly every plate removed is scratched or defaced and, therefore, of no value to the glazier, hence he allows no refund.

Mirrors

The average mirror risk is a profitable one.

Mirrors that are contained in movable stands or mirrors that are screwed to a centre strip are of course subject to frequent breakage, the former because of excessive handling, and the latter from strain due to imperfect setting or to pressure that might not cause breakage of a mirror set in framework but which would be apt to cause breakage when set in this manner.

Mirrors in lower grade saloons are not considered desirable risks because of the character of frequenters, and the possibility of disorderly conduct, fights, etc., that lead to the throwing of missiles.

Bent Glass

This is a character of risk that is very much discriminated against in plate glass insurance for many reasons.

Primarily, the cost of replacement of bent glass is excessive because of the small number of bending plants.

Secondly, from the special charges which are made by the manufacturers to overcome the loss in bending the plate, as many flat plates are broken in the process.

The dealers do not make any salvage rebate for a broken bent plate. The company, therefore, sustains a total loss.

The delays which are suffered in the replacement of glass because of the difficulty in securing prompt service from the manufacturers embarrass a plate glass insurance company to a very great degree in its relations with its clients, which, as can be appreciated, is a very material factor.

Very often the transportation companies will not take the risk in transit, and the company has to not only face the possibility of a loss in that direction, but another delay ensues in procuring a substitute plate.

It requires considerable expertness in glazing a bent plate, and in small towns a high cost of glazing is apt to be sustained.

The general attitude of plate glass insurance companies toward this risk is evidenced by the instructions of the manual, to the effect that agents are not authorized to bind the company on any light of bent glass exceeding twenty-one square feet in area.

Cathedral Glass

This is a type of risk quite foreign to that of plate glass.

The windows are composed of pieces of stained glass set in small sections of lead, and while a loss may only affect a small part of a window, the frequency of breakage and the special type of labor incident to replacement offset the limited fracture.

Corrosion of the lead will often cause pieces to fall out.

There are several features to be considered in underwriting this type of risk.

Primarily the degree of artistic design must be investigated. Very often church windows are manufactured at a very high cost although in area they may be of limited square footage. This is due to the presence of body figures that carry high art, and the fracture, for instance, of the facial features may involve a company in a loss far out of proportion to the total value of the entire window. The manufacturer, of course, retains the artist's original sketch, and it becomes necessary to employ his services to make the replacement. It is natural to suppose he would not make the same at the proportionate cost as when making the entire window.

When we consider the insurance of windows where ordinary geometrical design is employed, the local glazing facilities must be investigated to determine whether the town dealer is competent to make the repairs. Very often the manufacturer may have used a specially prepared coloring to produce an effect, which cannot therefore be replaced except by said manufacturer. This necessitates his services in any replacement.

The protection of the glass by screening or a layer of transparent glass diminishes the risk.

The distance above the sidewalk, the proximity of adjoining buildings, the nearness of gas or electric light, the method of cleaning, are elements of risk that have to be considered.

Where cathedral glass is used in store fixtures, the loss is confined to a small amount because of its limited area. This kind of glass is generally installed in partitions, and is most frequently broken by people pressing against the glass.

It is a recent practice in the construction of buildings to erect cathedral domes over a court in the building, and care should be exercised to protect a risk of this nature by a wire screening over the glass to avoid breakage by articles falling from upper stories.

Canopies and awnings are often made of cathedral glass, and are very much subject to breakage because of their peculiar street exposure, and to the possibility of breakage from atmospheric changes and also the exposure to breakage from articles falling from upper stories.

Lettering

This class of risk is to be assumed in conjunction with the insurance of the plate glass upon which the same is located.

The company's liability is limited to loss when caused by breakage of the plate itself, hence if the lettering is of porcelain type and cemented on the plate and becomes detached, the company has no liability.

It should be remembered that a loss is total because of absence of salvage.

Loss is usually settled by cash payment if the cost of replacement is in excess of the sum described in the schedule as amount insured. The assured should be required to fix the valuation at the time the application is made.

The insurance of lettering is always considered as an accommodation and, therefore, as before stated, should not be treated as an insurable risk separate from the store front risk.

Glass Signs

Occasion will often arise for consideration of this risk, and as a loss is always total, a high rate is charged.

Care should be exercised to determine that the sign is securely fastened, is properly set in the frame, is remote to street hazards, and primarily that the concentrated risk is not heavy. There are signs manufactured of small dimension that are costly to replace and the loss being total the careful underwriter will refrain from accepting such class of signs.

One special risk of this type is the one where the sign is placed at the base of the window close to the sidewalk, therefore being subject to breakage by persons approaching the window to view the display and accidentally kicking the glass, or through breakage by missiles lying on the street being kicked through the glass.

Sky-Light Glass

The principal causes of loss to which sky-lights are exposed are atmospheric changes when the glass is set in iron frames, the raising and lowering of sections when used for ventilation, and the falling of articles from lofts of adjoining buildings.

Special labor charges prevail in replacement because of the character of the work.

Special Risks

Club houses, hotels, hospitals, municipal buildings, public libraries and kindred risks are free from the hazards that attend store front risks, etc., and because of the reduced exposure are rated low by the plate glass insurance companies and constitute a class of desirable business.

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CHAPTER LX

REINSURANCE*

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REINSURANCE being a matter of private contract and division of risk between companies wherein the insuring public has no part, is one feature of the insurance business little known or understood outside the offices of companies, and is a subject upon which very little has been written for publication. Although based upon simple principles, it is a complex part of the general scheme of insurance and has elaborate details which it will not be possible within the space allotted to this article to more than sketch in outline, and, therefore, many features and details of the reinsurance business will be omitted entirely.

By the same law of average, or probability of loss, which underlies all forms of insurance, and necessitates the writing of large numbers of single risks—upon lives or properties as the case may be—in order to gather together premiums of sufficient aggregate amount to meet the mortality or the monetary loss arising on individual risks, it is necessary that no company should expose itself to a greater amount of loss on any one risk than is fairly proportionate to its resources and its average exposure on all risks, and it is further theoretically correct and necessary that the probability of loss on large individual risks be divided or distributed among several or many underwriters.

Such a distribution of risk formerly resulted from

*For the purpose of simplifying this article, words or phrases of a highly technical nature have not been used, while others have been used in their broader sense. Thus the word "assured" is used to represent the *person* whose life or property is at risk; the word "insurer" is used to mean the *company* which directly assumes and insures the risk; and the word "reinsurer" means the company that indirectly assumes a participation in the risk through reinsuring a portion of the insurer's liability.

leaving it to the assured to divide the amount of insurance on his life or property among a number of companies, each of which would issue policies for amounts within their respective limits; but as the old methods of business in general became improved by new and economic methods the insurance business also changed, and the assured then demanded fewer policies, for economy of time and attention to renewals, premium payments, endorsements, and above all for the simplification of loss settlements; it being obviously easier to adjust a loss or prove a death and complete the claim papers for a large amount under one or a few policies, than for an equal amount aggregately under a large number of small policies, and thus the insurance companies were moved to issue policies of large amount, and reinsure such portions thereof as exceeded the limit for their own exposure or liability on the risk.

Moreover, it frequently happened that property owners would require insurance on groups of buildings so closely situated as to expose each other to damage by a single fire, and the companies gauged their lines on the basis of one and one-half limits for two exposing risks, or two limits for three, and reinsured the amounts in excess of such lines. The next step in this process was the limitation of cumulative liability subject to conflagration, and it may be said with reasonable accuracy that these were the main factors in the origin of reinsurance.

A modern factor, which has become of almost equal importance to the foregoing, lies in the necessity of a company protecting and encouraging its own agents, this being of great importance to fire companies, but of even greater importance to life and casualty companies. To illustrate, suppose a company fixes \$10,000 as the maximum amount or limit of insurance to be carried upon any one risk, and its agent procures an application for \$20,000. If the company accepts only \$10,000 the agent

must admit to the applicant that his company is not strong enough to assume a risk of \$20,000 and that might raise a suspicion that the company might, perhaps, be not wholly trustworthy for \$10,000; and, moreover, the agent would then have to furnish his client a policy from some other company for the remaining \$10,000, thus admitting that the other company issues policies with terms and conditions as favorable as the policies of his own company, and silently suggesting to the applicant that perhaps he should have originally made application to the other company. This is minimized in the fire business, where all policies are of standard form, but in the life and casualty business where policy conditions, values, etc., are competitive, it disturbs the confidence of the applicant, and at the same time disturbs the loyalty of the agent, brings him into business relations with a competitive company and prepares the way for the latter to acquire his services. By issuing the policy for \$20,000 and reinsuring the excess of \$10,000 the company may protect itself and its agent, and inspire confidence in its assured, the good-will of its policyholders being always a valuable though intangible asset of a company. Reinsurance may, therefore, be said to be an almost indispensable adjunct to or part of the insurance business.

In its earliest forms—inaugurated by the fire and marine companies—reinsurance was really co-insurance as all the hazards and consequences of a risk, and the conditions of the insurance were shared alike by the several companies participating, and each participant had a voice in the settlement of loss or damage, or the handling of salvage. Experience soon laid bare the objectionable features of any form of contract whereby the assured came into negotiations with the co-insurers after a loss had happened, and reinsurance was evolved with the characteristic that no business relations whatsoever exist between the assured and the reinsurer, the primary

contractual relations (*i. e.*, insurance) being wholly between the assured and the insurer, and the secondary contract (*i. e.*, reinsurance) being between the insurer and the reinsurer.

Reinsurance under reciprocal arrangements between friendly but competitive companies came into great favor upon the theory that with approximate equality of risks and premiums, the exchange of reinsurances would yield a profit to both companies through the wider distribution of liability, as in other words, a company assuming \$50,000 on a risk, might give off \$10,000 to each of four other companies, and receive in return four separate risks of \$10,000 each, or perhaps eight risks of \$5,000 each, and thus each of the companies would receive participation in risks not controlled or acquired by their own agents. This in time proved to be an ill-devised plan as it revealed to competitors very important data regarding the risks, and enabled the reinsuring companies or their agents, to attack and acquire the business, so the custom of interchanging business (*i. e.*, reciprocally reinsuring) was abandoned by nearly all companies, and superseded by treaty reinsurance with non-competitive companies. In Europe, where reinsurance had its inception and has attained the important position of a separate line of business through the establishment of numerous companies chartered for reinsurance business exclusively, there is little or no reciprocal reinsurance transacted, but a vast amount of treaty reinsurance of one form or another.

Reinsurance is transacted upon one or other of two fundamental bases, one of which is called "Facultative" and the other "Obligatory," and while these two forms have some details in common, they differ in many respects.

Facultative or optional reinsurance relates to individual risks and is effected with or without a general agreement

or contract between the companies, by merely using forms of application and " reinsurance certificates " embodying all the terms and conditions of the reinsurance. The insuring company submits to the reinsurer, with the application or proposal for reinsurance, all of the known facts or circumstances of the respective risk, in order that the reinsurer may be guided thereby in judging the physical and moral aspects of the risk and determining whether to accept or decline a participation therein. The reinsurer selects the risks and fixes their amount, before assuming any liability, and the reinsurance may be arranged to commence as from the actual time of its acceptance, or as from the inception of the original insurance, or at any other agreed time. It is sometimes stipulated that a reinsurance after acceptance shall be carried to expiration or maturity, but more often the reinsurer has the right to cancel at any time. The reinsurance may follow and participate in all the features of the insuring policy, or may be limited to certain specified parts of the risk, and likewise the reinsurance premium may be at the same, or a higher or lower rate according to mutual agreement. In the investigation and settlement of claims or losses on risks so reinsured the insurer acts alone, and the reinsurer is bound to accept the settlement and contribute its proportionate share. The reinsurer also bears part of the expense of the adjustment.

Obligatory Reinsurance is transacted under general contracts or " treaties " applicable to classes of risks, or to the excess lines arising above stipulated limits, or to a fixed quota of each and all risks assumed by the insurer. The treaty confers upon the insurer very extensive powers that might offer opportunities of discrimination were they not counterbalanced in such way as to make the best interests of the insurer common with, and inseparable from, the interests of the reinsurer, and in view of this community of interest it has often been

said that a reinsurance treaty resembles a partnership more than an insurance contract or policy. In its legal aspects a reinsurance treaty is not a partnership, but a contract of insurance against indirect (instead of direct) loss or damage, the reinsurer being obligated for a consideration, to indemnify the insurer in part for a loss which the latter has to make good to the original insured, and as it is uncertain whether or not this obligation will materialize through or in consequence of any of the eventualities insured against, the reinsurance effected under a treaty evidently bears the characteristics of insurance. The similarity between a treaty of reinsurance and a silent partnership lies in the fact that the insurer and reinsurer both have capital invested in the venture; both gain from the premiums received; both may sustain loss; while one party, the insurer, conducts all the activities of the business with most comprehensive powers and binding effect upon the other party, the reinsurer; and in the equation of earnings the insurer receives, not only the whole proceeds of its own part of the business but also receives as compensation for management a share of the reinsurer's profits, commonly called "contingent commission." The reinsurer follows the insurance fortunes, but not the commercial fortunes of the insurer, and although in a sense the insurer trades upon the capital of the reinsurer, issuing policies for the amount which both companies combined are able to assume on a risk, within the limitations of the treaty, there is no corporate unity between them, and no actual partnership—merely a trading agreement with community of interest.

The insurer selects the risks, and cedes a portion to the reinsurer, according to the limits and stipulations of the treaty, and furnishes such information or particulars of each risk as may be required, not for the purpose of enabling the reinsurer to select as in facultative reinsurance, but to afford the reinsurer an opportunity of prop-

erly classifying and handling the business. The insurer is bound by the terms of the treaty to retain at its own liability on each and every risk a stipulated amount which is usually not less than the amount ceded, and, therefore, while the purpose and effect of insurance is to *transfer* a risk or probability of loss, and give the assured (or beneficiary) complete indemnity to the extent of the insurance, the process of reinsurance is different in that it distributes the risk or its consequences and leaves each participant, insurer and reinsurer, to bear a portion of the loss in any event.

The so-called "salvage duty," that is the duty of the assured to do everything possible toward reducing or preventing further damage when the event insured against happens, is also imposed upon the insurer to the extent that the insurer must oppose as much as possible any unjust or extraordinary demands of the assured or the beneficiary, and neglect of this duty soon reacts upon the insurer.

Reinsurance value, as a rule, is a fixed one, being a pro rata part of the insurance value of the direct risk, whereas, the direct insurer has always the right to inquire into the actual insurable value of the risk both before and after loss has occurred and see that the assured is not making a gain. This has an important bearing upon the transactions of the insurer for joint account of the reinsurer, and is one among many features that necessitate good faith and absolute equity between the contracting companies.

The positions of both the insurer and reinsurer under a treaty comprise not only rights but also duties, and the management of the business being a vested right or privilege of the insurer, it follows logically that the insurer must continue to perform its duty of management so long as any reinsurance remains in force, or failing to do so, the reinsurance ceases. Thus, if an insurer stops

business or goes into liquidation, or sells out to some other company, or is amalgamated with and absorbed by another company, and consequently ceases to perform the management of the business of the reinsurer as previously ceded under a treaty, the reinsurance terminates unless arrangements have been made by mutual consent to transfer to the other company the treaty and the entire portfolio of cessions, including all the rights and duties of the original insurer. In Europe, where the reinsurance business is regulated by special laws, it is well established through the courts that a reinsurance treaty, or a portfolio of reinsurances can only be assigned or transferred by mutual consent of the companies at interest; but in America where the statutes are still crude, though voluminous, it has been sustained by the courts that a company even in insolvency has the right to assign its reinsurances. If the premium paid were the only consideration for reinsurance, the ruling referred to would not be unjust, but in all treaties there are other valuable considerations.

In the reinsurance of fire and marine risks it is generally customary for the liability of the reinsurer to extend to or participate in all the items, terms and conditions of the original policy, and for the reinsurance premium to be a proportionate share of the original premium, but in the reinsurance of life and casualty risks, where there may, perhaps, be no occasion for having the reinsurance co-extensive with the insurance, it frequently happens that reinsurance is effected under some specified features of the policies and at special premium rates which have been calculated to compensate for only such elements of the original risk as have been assumed by the reinsurer. Thus, in liability business, the "second limits" may be reinsured; or in accident business, the death and dismemberment features may be reinsured separately from the disability and other indemnities;

the premium rates for such reinsurances being specially determined. In life reinsurance we find the nearest approach to exact science and economy, as the amount of reinsurance is determined by the "net amount at risk" under the respective policy, that is to say, the reserves as laid or accumulated, are deducted from the face amount of insurance and the difference or "net amount at risk" is the basis for reinsurance. The amount of reinsurance consequently diminishes from year to year as the reserves increase, and the premiums are calculated upon the actual amount of reinsurance instead of upon a constant amount.

Treaty reinsurance is called "automatic" because the liability of the reinsurer attaches simultaneously with the liability of the insurer, and usually continues until the risk of the original insurer ceases, although in some instances the term of reinsurance is specially fixed for a shorter time. Life companies assume risks for the balance of the assured's life, and may effect reinsurances concurrently, or for a term of five or ten or twenty years, after the expiration of which the insuring company carries the entire liability.

During the last five years the volume of reinsurance transacted in the United States has increased very rapidly in every branch of the business, and this augurs well for the future stability of American companies as the reinsurers are mostly European companies that transact world-wide business and are not much affected by the unprofitable years that periodically occur in all localities and especially in America, by reason of disastrous fires or great casualties, and the effect is the same as though the amount of capital invested here in various underwriting enterprises were doubled or trebled. When San Francisco burned the foreign reinsurers paid more than thirty millions of dollars and it may be said to the great credit of the admitted foreign companies that there

was not one failure to pay up, while in several instances American companies having local or reciprocal reinsurances from other American companies sustained a considerable amount of loss through the non-payment, or through the scaling down of those reinsurances.

Even in the year 1910, without conflagration, the admitted foreign reinsurance companies contributed over nine million dollars to the fire losses in this country, and it may be said, in closing, that the relations between the American and European companies through the medium of reinsurance treaties, have become intimate and permanent, and the results are directly beneficial to the shareholders and policyholders of the domestic companies, while at the same time affording the foreign companies some returns for their enterprise.

CHAPTER LXI
AUTOMATIC SPRINKLER LEAKAGE
INSURANCE

BY HOWARD G. CHASE

The Automatic Sprinkler

ONCE upon a time, so the story goes, a fire started in a building at a spot where the flames soon reached a lead water pipe. The pipe melted, water was discharged from the opening and the fire was extinguished. This is supposed to have been the incident which gave birth to the idea that finally resulted in the automatic sprinkler.

This curious happening may have been and probably was subsequent to the first use of the perforated pipe system of fire protection which was first installed in mill properties about the year 1850. This system consisted of pipes, pierced with small holes at intervals, which were run along the ceiling. In event of fire, water was turned into these pipes by opening a valve. Later came the open sprinkler system, identical with the perforated pipe system, except that the water, instead of being precipitated through openings in the pipe itself, was discharged through many small holes in bulbs which were set into the under side of the piping. Neither of these systems was, of course, automatic and it was probably not for some ten years or longer that the principle was evolved which used the heat of the fire to produce openings through which water might be discharged upon the flames.

The early types of automatic sprinkler heads which took the place of the perforated bulbs of the open sprinkler system, were crude and unreliable. The fusible link was born indeed, but was so imperfect in the early forms of its construction and in the composition of the fusible

solder, that the heads might operate or not, in event of a fire. Frequently also, heads would open without any excuse whatever and serious water damage would result. Gradually, however, improved types of sprinkler heads were developed, so that today it may be said that, while they can hardly be called perfected, they are almost uniformly reliable in event of a fire. Their unreliability is now principally confined to their tendency to open when there is no fire. This tendency has been checked to a moderate degree during the past few years but probably can never be entirely eliminated. In a large majority of cases of accidental opening of sprinkler heads, the cause cannot definitely be determined and is put down simply as "defective head." There may have been lack of care in the assembling of the different parts of the head, one or more of the parts may have been imperfectly turned out or the solder itself may have been at fault.

There are, at this writing, about a dozen different types of heads that have been approved by the fire underwriters, after exhaustive tests at their laboratories. It is the practice of the insurance companies writing sprinkler leakage to insure only such systems as are equipped with approved heads. The general form of construction of these different heads is very similar. An opening is provided, usually one-half inch in diameter, which is closed by a disc that is held in place by struts or levers, adjusted off-center, which in turn are held in place by fusible solder. When the temperature reaches a fixed degree, 165° in the case of low test heads, the solder melts, the struts and disc fly out and the emerging water is thrown violently against a small deflector which is attached to the frame of the head, producing a heavy water spray which will cover an area of about eighty square feet. The solder in the standard forms of high test heads is so composed as not to fuse until the surrounding temperature reaches 212°, 285° and 360° respectively. These

high test heads are used in places where the conditions are such that higher temperatures than normal are usual or to be expected, as in boiler rooms, dry rooms, tops of skylights, near steam pipes, etc.

The other features of the automatic sprinkler system, the piping, the valves, the automatic alarm and the tank, have also been subject to gradual development until today they approach perfection in their construction and arrangement. A very large majority of sprinkler systems are what is known as "wet"; that is, water under pressure is always in the pipes, ready to be discharged when a head opens. In buildings which are not heated and in show windows, open sheds and other places exposed to freezing temperature, "dry" systems are installed. In a protected place there is placed a valve called the "Dry Pipe Valve," within which is a cap or plate which holds back the water from the sprinkler piping. This cap or plate is held in place by the air in the pipes, which is under sufficient pressure to accomplish this. When the air pressure is lowered by reason of the opening of a sprinkler head, the cap or plate is displaced by the pressure of the water behind, which then rushes into the pipes, to be quickly discharged through the open head.

Every modern sprinkler system is equipped with an automatic alarm which is put into operation by the passage of water through the piping. This alarm may consist of a gong or gongs inside or outside of the building and may also be connected with some outside station, such as the fire department, the local telegraph office or, in the larger cities, with a central station, specially provided.

Water is generally supplied to sprinkler systems from gravity tanks that may be erected either upon the roof of the building or upon an open framework tower rising from the ground. Sometimes pressure tanks are used but these are not recommended for a primary supply.

Pressure tanks are usually located in the building, just beneath the roof. In some instances water is obtained direct from pressure mains and often there will be a fire pump as an auxiliary.

A serious menace to life and property is the tremendous weight of the average sprinkler tank, a weight that is concentrated over a very small part of the building. Defective or inadequate supports not infrequently cause the fall of the tank. It goes down intact—in the case of a 20,000 gallon tank, a weight of over eighty tons—tearing and wrecking everything in its way until it reaches the lowest cellar, where it will finally break up. The hazard of a falling sprinkler tank can be likened only to that of an exploding steam boiler.

Sprinkler systems were first installed in mills and factories. Gradually, however, their use has spread to all classes of buildings, with the one possible exception of residences. Sprinkler systems are now to be found in public buildings, theatres, hotels, office buildings, shops, big and little, wharves, warehouses, and in factories and mills of all descriptions.

Inspections

The paramount importance of the regular and rigid inspection of sprinkler systems cannot be too strongly emphasized. So obvious is it that a sprinkler system is a menace to life as well as to property, that the owner of every building so equipped should see to it that the chance of an accident is reduced to the minimum. Without regard to the amount of insurance carried, *prevention of accident* is the first end to be sought. To achieve this, careful and intelligent inspections by experts at regular and frequent intervals are absolutely necessary. An inspector will usually start at the top of the building with the tank, examining its supports and opening the trap door in the cover to ascertain, in winter, whether the means of heat-

ing the water in the tank, usually a steam coil, to keep it well above the freezing point, is properly performing its function. He will then come down through the building examining every foot of sprinkler piping and every head, on the lookout for defects or external conditions which might be dangerous. Frequently he will find driving belts in too close proximity to heads, or goods piled too near, or merchandise displayed by being hung over the piping, or he will find electric wires strung too close. These are only a few of the dangerous conditions which are daily found by a sprinkler system inspector. He will then examine the cut-off valves, the dry pipe valve if there be one, and the automatic alarm, to see that they are in working order. An ounce of prevention is worth a pound of cure, for a leakage loss does not always stop at the property loss; it often causes a total or partial shut-down for a time and either from this or by reason of the damage to merchandise, orders are lost or canceled and the reputation of a merchant for promptness in deliveries, suffers. To put it in a nutshell, a first-class inspection service is just as necessary in connection with sprinkler insurance as it is in connection with steam boiler insurance. Sprinkler systems should be inspected by experts every three or four months, just as steam boilers are inspected.

Insurance

The subject of automatic sprinkler leakage insurance is to be approached in this year of grace, if not with fear and trembling, at least with caution, so far as that portion of it relating to the making of rates is concerned, on account of the chaotic conditions that obtain. These conditions, however, are being remedied in various sections of the United States and in due course will no doubt be corrected in large measure throughout the country.

With the gradual perfection of automatic sprinkler systems for the purpose of protection against fire and with

the corresponding increase in the number of installations, the necessity for insurance protection against water damage, caused by accidental leakage or discharge from such systems, became recognized and the underwriting of this hazard began.

The causes of water damage are many: As has been noted, sprinkler heads are adjusted with a fusible link which readily melts when the temperature reaches a certain degree. They will open when the natural or artificial temperature reaches the degree fixed, even if there is no fire; they will open under water pressure from weakness or defects; they will open when the fusible link is weakened by corrosion; they will open under the constant vibration of machinery; they will freeze and burst when exposed to cold from an open window or a broken pane of glass; they will open by reason of an accidental knock or blow, such as might be given by a broken belt, by the handling of merchandise or a board or ladder; they will open when accidentally charged with a sufficiently powerful electric current; valves, pipes and fittings freeze and burst; elbows and tees are stripped under vibration; water hammer will cause discharge from sprinkler heads, elbows, tees and other pipe joints; supply tanks will fall, collapse, burst, leak or overflow; the settling of a building will weaken sprinkler pipes and fittings sufficiently to cause leakage.

In practice it has been found that in a majority of accidents the cause could not definitely be determined. Sufficient it is to say that an automatic sprinkler system, while by far the most important of all fire protection devices, is at the same time an ever present menace as far as water damage is concerned and should be covered by an adequate policy of insurance.

The sprinkler leakage policies issued by the different companies are necessarily similar in many of their provisions but differ widely in other provisions. They all

cover accidental leakage or discharge of water from the sprinkler system, with certain limitations. These limitations vary in the different policies, some of which are much more liberal than others to the assured. In addition to this coverage, a few of the companies issue policies to cover leakage or discharge of water from the sprinkler tank, and still fewer to cover damage caused also by the impact of the tank itself, its parts, supports and platform, in event of its fall or precipitation. With these two latter provisions included and with a minimum of limitations and exceptions, a coverage is obtained which gives complete protection to the assured with little opportunity for misunderstanding or dispute in event of a loss. It is possible that in the not distant future a uniform or standard form of policy may come into use and this most desirable condition will be welcomed no less by the assured than by the companies.

Rate Making

And now to approach that subject which is at present the bane of the underwriter, the making of sprinkler leakage rates. In the early days the damageability of the merchandise or other property at risk was about the only feature considered in making a rate. Only to a minor extent were considered the make of the system, its age, its loss record, the location of the cut-off valves, the protection afforded by an automatic alarm or the lack of protection due to its absence, the presence of a watchman upon the premises when not open for business and whether the automatic alarm was connected with an outside station such as the fire department, telegraph office or a central station especially established for the purpose. A risk, on account of defects in the equipment or protection might be declined by one company while it might be accepted by another. Determination of the proportionate damageability of merchandise was to some

extent a matter of guess work, there being but little experience. Of course, it was evident that cutlery was a greater hazard than glassware or china and approximately relative proportions of hazard could in many other cases be determined, but in diverse instances there was a wide divergence of opinion among the underwriters as to the hazard, so that where one company published a manual rate of \$1.25 per hundred, another might fix a rate of \$2 or \$2.50. As competition for business increased, the manuals were less and less adhered to and finally, with the entrance of a considerable number of fire companies into the field, there ensued a period of rate-cutting which at the present writing still continues. The experience of the companies which have been underwriting sprinkler leakage for a period of years shows that the present average of rates is too low to properly compensate the companies and to properly protect the policyholder.

A solution of the problem of rating seems to be in sight, however. In fact, it has been put into partial effect in the middle west and in due course will undoubtedly be extended to other parts of the country. In order to comply with the provisions of a law passed in 1911 in the state of Missouri, the different companies doing business in that state engaged an experienced actuary to prepare a schedule of basic ratings to be filed with the Missouri insurance commissioner and also specific ratings for every sprinkler risk in the state. The method adopted for arriving at these specific ratings is known as the "Analytic System for the Measurement of the Relative Hazard of Sprinkler Leakage," and necessitates the careful survey of each risk with reference to a certain defined formula. This formula, while complicated, is sane and workable, and takes into account each and every condition affecting the hazard, which the old method of "going-it-blind" rating failed to do.

After some tentative experimenting, a certain general basic rate was determined upon as being fair and equitable and as yielding specific rates, after the application of the formula, which would be lower than the rates that generally obtained before the period of rate-cutting began and yet which would be high enough to safeguard the underwriting companies and their policyholders.

As a beginning, certain "standards" for sprinkler equipments were determined upon which may be briefly summarized as follows: Those having to do with (1) sprinkler heads (*a*) in show windows, (*b*) in enclosures or rooms subject to high temperature; (2) those having to do with location of valves, and the construction of hangers and drips; (3) those having to do with the dry pipe system, particularly as regards (*a*) pressure gauge, (*b*) minimum air pressure, (*c*) drainage, (*d*) enclosure of valve; (4) those having to do with the gravity tank upon a building, particularly as regards (*a*) drain, (*b*) supports for tank, (*c*) cover, (*d*) boxing for pipe, (*e*) ladders, (*f*) discharge pipe, (*g*) overflow, (*h*) heating, (*i*) construction of wooden tanks, and (*j*) dimensions of tank; (5) certain miscellaneous requirements, such as (*a*) that sprinkler pipes should not be used in any way for domestic service; (*b*) that stock should not be piled nearer than two feet to the ceiling, (*c*) that sprinkler piping should not be used for the support of stock, clothing, electric light wires, etc., (*d*) that sprinkler systems be not over ten years old, and (*e*) that sprinkler heads be of approved make.

The formula itself, which is applied specifically to each risk after a survey, consists of certain charges and credits. The charges are definite percentages to be added to the basic rate and are determined by (1) area, (2) stock in basement or sub-basement, (3) the construction of the floorways and the character of the openings,

(4) finish, (applying to buildings only), (5) age of building, (6) sprinkler equipment, particularly as to the freezing exposure, the high temperature exposure, the faulty location or construction of valves, pipes not supported as per standard, drips not provided with brass plugs as per standard; dry system pressure gauge, air pressure, drainage not as per standard; dry pipe valve not enclosed as per standard; certain charges by reason of gravity tank or pressure tank not being as per standard; certain charges where sprinkler heads are exposed to violence or are over ten years old, and (7) damageability of stock.

The credits are certain percentages of the gross rates and are deducted therefrom. They are based upon (1) approved supervisory system, including valve alarm, (2) approved supervisory system without valve alarm, (3) approved alarm system with inside gongs, (4) approved alarm system with gongs outside building, (5) approved mechanical alarm with mechanical gong outside building, (6) watchman inside building, with watch clock, (7) watchman inside building reporting to central station.

A further deduction is obtained by the use of a reduced rate contribution clause which takes the form of an endorsement or rider to be attached to the policy, by the operation of which, in consideration of the further reduced rate, the assured becomes a co-insurer in event of the property at risk exceeding in value at the time of a loss, a certain relative percentage to the amount of insurance. A 10 per cent. reduced rate contribution clause secures to the assured a premium reduction of 60 per cent. A 90 per cent. clause secures a premium reduction of nearly 90 per cent. The 10 per cent. clause is the one most generally in use, however, and substitutes the practice heretofore generally followed by the companies of incorporating a co-insurance clause in the body of the

policy and of refusing to write a policy of insurance for an amount less than ten per cent. of the value of the property covered.

This analytic system, so far as it has been used, has shown itself to be a scientific method of arriving at the relative hazard of sprinkler leakage and it would appear that its use will before long become practically universal. If so, it will solve many of the problems which vex the underwriters today.

CHAPTER LXII
STEAM BOILER INSURANCE

BY ALLAN D. RISTEEN

Nature of the Hazard

THE STEAM BOILER. In the early days of steam engineering it was common to make boilers in the form of simple cylindrical tanks, which were partially filled with water and placed over a fire. The demand for greater efficiency, safety, and ease of repair has now rendered this primitive type nearly obsolete, and the modern steam boiler is a more or less complicated structure, built in a great variety of forms, over 300 recognizably different designs being in regular use today.

In constructing a boiler, attention is paid to the pressure that it is to carry, and its parts are proportioned accordingly. In boilers intended for household heating the pressure usually does not exceed five pounds per square inch, whereas in some of those that are used for the generation of power it may run up as high as 250 pounds per square inch. It is usual to design steam boilers so that they can withstand, before bursting, a pressure four or five times as great as that which they are intended to carry in their regular work. The factor four or five, by which the strength of the boiler is increased above the stress that will actually be applied to it, is called the "factor of safety" of the boiler. It is intended to cover all uncertainties that may exist in the design, workmanship, and materials employed, and to provide a certain range beyond which the pressure in the boiler may be carried (in case the attendant is careless or inattentive) without bringing about disastrous results. It also makes allowance for the deterioration that all boilers experience with age.

Every boiler is supposed to be fitted with certain accessories which are essential to its safe operation, the most important of these being the safety-valve. It is also provided with openings which permit of access to the interior when the boiler is not under pressure, these being closed by cover-plates when it is in operation. Openings large enough to permit a man to enter the boiler are called "manholes," while those that will merely admit the hand or arm are called "handholes."

REALITY OF THE EXPLOSION HAZARD. Between October 1, 1867, and January 1, 1911, there were, in the United States and in contiguous parts of Canada and Mexico, no less than 11,134 steam boiler explosions, these being attended by 11,391 deaths, and by more or less serious injuries to 16,562 persons in addition. In 1910 there



LOCATIONS OF BOILER EXPLOSIONS IN THE NORTHEASTERN UNITED STATES DURING 1909.
(EACH DOT REPRESENTS AN EXPLOSION.)

were 533 explosions, resulting in the death of 280 persons, and in more or less serious injuries to 506 others. The geographical distribution of the explosions in the northeastern part of the United States (where the boilers are most numerous) in the year 1909 is shown in the accompanying sketch-map, where each dot represents one explosion.* The distribution in other recent

*This map is taken from *The Locomotive* for July, 1910, where the distribution of the explosions is shown for the entire country.

years is much the same. The number of boiler explosions in the United States compares most unfavorably with the number in other parts of the civilized world. We have four times as many as England, and seventeen times as many as Germany. (See *The Locomotive*, April 1909, page 173.) This enormous difference cannot be explained by assuming that the number of boilers is correspondingly greater in this country, nor by assuming that our statistics are more complete than the foreign ones.

No reliable data can be given respecting the total number of boilers in use in the United States, nor respecting the total property loss from boiler explosions. The loss due to a single explosion often exceeds \$100,000, however.

CAUSES OF EXPLOSIONS. The absurd idea that a boiler cannot explode unless the water in it is low was once almost universal, and it is still altogether too common. Low water is certainly one cause, but it is far from being the only one. A boiler manifestly must explode whenever the stress that is thrown upon any of its parts, from any cause whatsoever, is greater than the strength of that part. The pressure within the boiler may mount up too high while the boiler itself remains in good condition, or the boiler may have deteriorated so that it cannot withstand a pressure that would otherwise have been quite safe, or these two main causes may be operative at the same time—the boiler being weakened in some way, and the pressure increased also.

Explosions from low water are rarely as disastrous as those that occur when the boiler has a proper amount of water in it, and, generally speaking, if an explosion is exceedingly violent and destructive, we may be fairly sure that it was not due to low water. A number of experimental attempts have been made to produce explosions by letting boilers become dry while under steam, and then pumping cold feed water into them. Ruptures

have been brought about in this way, but no violent explosions have resulted.

Explosions may be due to simple mismanagement. Many are caused, for example, by putting boilers quickly into free communication with others that are carrying a somewhat higher pressure. An act of this kind causes the water to be thrown about with a violence out of all apparent proportion to the difference in pressure, and as it strikes against the shell plates, shocks are produced which are often severe enough to cause the immediate and violent disruption of the whole structure.

WHAT HAPPENS WHEN EXPLOSIONS OCCUR. The phenomena attendant upon boiler explosions vary greatly in different cases.* Sometimes a tube ruptures, letting out a fearful stream of steam and boiling water, commonly scalding one or more employees seriously or fatally, and often throwing the fire from under the boiler out into the room. Sometimes the whole boiler blows apart at once, with the result that the building is torn down in an instant, and many employees may be killed or buried in the ruins. Fire often follows, with dreadful consequences. In the terrible explosion at Brockton, Mass., on March 20, 1905, which led to the present stringent boiler laws of Massachusetts, some 200 employees were imprisoned by the falling ruins, and many of them were burned to death before the eyes of their would-be rescuers. (The total loss of life from that explosion was fifty-eight, and 117 persons were also injured. The property loss was estimated at \$250,000.)

The worst boiler explosion in history, so far as loss of life is concerned, occurred on the Mississippi river steamer *Sultana*, near Memphis, Tenn., on April 27, 1865. The *Sultana* was loaded down with northern soldiers just

*Perhaps the most marked similarity on record is that between the explosion at the Park Central Hotel, Hartford, Conn. (February 18, 1889), and the one at the Gumry Hotel, Denver, Colo. (August 18, 1895). In each case the hotel was destroyed in the night, and in each case the property loss was about \$75,000. In the Park Central explosion twenty-three persons were killed and ten were injured, and in the Gumry explosion twenty-two were killed and seven injured. In each instance the boiler contained plenty of water.

released from southern prisons. The explosion killed 1,238 persons and destroyed the boat.

Exploding boilers are often thrown high into the air, but it is seldom possible to say just *how* high. In one case, however, the writer found it possible to determine, with a fair degree of accuracy, the vertical distance to which the drum of an exploded water-tube boiler was thrown. This was found to be 1,659 feet, or almost exactly three times the height of the Washington monument.*

History of Steam Boiler Insurance

BEGINNINGS OF BOILER INSURANCE. The "Huddersfield Association for the Prevention of Steam Boiler Explosions," formed at Huddersfield, England, about 1854, appears to have been the first concern to make a business of looking after steam boilers, though it did not engage in actual insurance, but merely provided systematic inspections for its members. The "Steam Boiler Assurance Company," organized at Manchester, England, in 1859, absorbed the Huddersfield association in 1860, and was probably the first to issue policies of insurance upon steam boilers. The sums that it had at risk were very small. The well known "Manchester Steam Users' Association" was formally organized in January, 1855, though preliminary meetings were held in the latter part of 1854. This association at first merely made inspections and furnished mechanical advice, but in December, 1864, it broadened its field, and thereafter issued policies of insurance also. Numerous other associations and corporations were subsequently formed in England, as well as in Germany, France, and Italy. The "Boiler Inspection and Insurance Company of Canada," now the leading company in the Dominion of Canada, was organized in 1875.

*The explosion here cited occurred on June 15, 1909, at the plant of the Denver Gas & Electric Company, Denver, Colo. For further details, see *The Locomotive*, July, 1909.

BOILER INSURANCE IN THE UNITED STATES. The first company to engage in steam boiler insurance in the United States was the Hartford Steam Boiler Inspection and Insurance Company, which was formed in 1866. Until quite recently this company confined its attention exclusively to the inspection and insurance of steam boilers, but it has lately taken up fly-wheel insurance also. The Fidelity and Casualty Company was organized (though under a different name) in the spring of 1876. It conducts a general casualty business, steam boiler insurance being one of its several branches. The American Steam Boiler Insurance Company was organized in 1883, but after a checkered career it went into a receiver's hands in February, 1894. In more recent years a number of companies have added steam boiler insurance to their other lines of activity, and at the present time there are more than twenty companies, altogether, writing this form of insurance in the United States.

Nature of the Insurance

PREVENTION THE KEYNOTE. The keynote of boiler insurance should be the prevention of explosions, so far as prevention may be possible. In this respect it is more or less unique, though it is increasingly recognized in certain other lines that preventive inspection is well worth the expenditure of large sums of money. In employers' liability insurance and fire insurance, for example, the inspection service has become extremely important. In steam boiler insurance it is still more so, and an inspection service of the highest order is the most valuable feature of the business, both to the insuring company and to the owner of the boiler.

NATURE OF THE POLICY. In boiler insurance there is no such a thing as a standard form of policy. Each company has one or more forms of its own, and no two are identical in all respects. Every such policy, however, is a con-

tract in which the insuring company agrees to indemnify the owner for any immediate loss that he may sustain by reason of the explosion of his boiler, as well as for any other damage of like nature, for which he may be liable. As a rule, the policy also covers loss of life and personal injuries, although the man who may be killed or injured is not directly insured. The policy is intended for the protection of the *owner* of the plant, and no claim arises against the insuring company by reason of death or injury, unless the circumstances are such that the owner of the boiler may be liable for the said death or injury.

Most boiler policies cover only the *immediate* damage that may be sustained. Consequential damages, due to loss of business or to decreased efficiency of the plant, are not ordinarily included, although contracts covering such secondary damages may also be had, by paying an extra premium for the increased hazard. Loss from fire following an explosion is not covered by the boiler policy, even though the fire may be plainly due to the explosion. This part of the risk is carried by the fire companies.

As a rule, a boiler policy is written for a term of three years, though sometimes it is written for one year, and sometimes for five, and occasionally no definite term is stated, the insurance then continuing until due notice is given by one of the parties to it.

When one contract covers a number of boilers, the entire sum at risk is of course stated in the policy, and in addition it is customary to specify a limit to the liability of the insuring company for any one explosion or accident. Policies may be had, in which the total sum insured is applicable to any one accident, but a higher premium must be paid in that case, to cover the greater hazard to which the insuring company is exposed.

MULTIPLE EXPLOSIONS. It sometimes happens that two or more boilers explode at practically the same instant. The accident is then regarded as a single explosion, in-

volving several boilers. Technical journals and newspapers universally refer to an event of this kind in the singular number, calling it a "multiple" or "compound" explosion; and the writer, having made careful search, is confident that no instance can be cited where this usage is not followed—unless it be in some court case, where an attempt is made to put an unusual construction upon the word "explosion."

Multiple explosions are not frequent, but they are sometimes appalling in magnitude. On July 25, 1887, a battery of twenty-two boilers exploded simultaneously at Friedenshütte, in Upper Silesia, Germany. On October 11, 1894, twenty-seven boilers in a battery of thirty-six exploded at Shamokin, Pa. On June 14, 1895, eleven boilers in a battery of fifteen exploded at Redcar, England. These are the worst examples on record.

RELATION OF THE INSURING COMPANY TO THE INSURED. During the term of the contract, the insuring company reserves the right to visit the insured boilers at any time that it chooses to do so, and to make as many or as few inspections as it deems desirable. It does not exercise a true supervision over the boilers, however, nor have any real control over them in the sense of being empowered to order repairs made, nor to modify the mode of operation of the boilers, nor to enforce changes of any kind whatsoever about the plant. It can only make recommendations, and its sole recourse, if the owner does not accede, is to cancel the policy. This the insuring company reserves the right to do, at any time it pleases; and in the event of such cancellation a portion of the premium is returned to the assured, the balance to be so returned being computed by subtracting from the original premium a reasonable sum for the inspections that have been made, and also a sum proportionate to the time the insurance has continued in force.

It is highly important to note that the insuring company does not guarantee to make inspections, and that it does not guarantee their excellence, if made. Its inspections are for its own benefit. Yet inspections so made are more valuable to the insured than they would be if they were performed by some disinterested person in return for a fee, because presumably the insuring company, when failure to detect some dangerous defect may cost it many thousands of dollars, will examine the boiler more carefully than it would if it were merely to receive five dollars or so for the work. Such a conclusion is in accord, at least, with what we know of human nature. The insuring company does not even agree (as a rule) to make any report to its insured, *except* in case it finds a defect which it considers to be dangerous. It naturally will make such reports, however, since its own interests are promoted by so doing. It will, in fact, call attention to every circumstance which may tend to lengthen the life of the boiler, or to render its operation safer, and it will freely and gladly render many other services contributing to these same ends.

The boiler owner must remember that he is under obligation to look after his plant with the same diligence that he would exercise if it were not insured, for he is not dealing with a company that undertakes to relieve him of any responsibility, but merely with one that agrees to indemnify him in case he meets with immediate loss or damage through the explosion of his boiler. Yet in the event of such a loss, and a subsequent suit against him, the insured certainly has a better standing in court from the fact that in taking out the insurance he showed a disposition to make his plant as safe as possible, by enlisting the services of a company having a large money interest in its safety, and employing trained men in the making of expert inspections.

RELATION OF THE INSPECTOR TO THE INSURED. It is no part of the inspector's duty to make the boiler ready for inspection. All the work of preparation must be done by the attendant in charge of it, and if the inspector does anything in this direction he does so on his own responsibility, and without any authority from the company that employs him. The insuring company does not provide men to assist in the care of the boilers, but only to examine them when they are made ready.

The inspector is not authorized to make any report whatever, oral or written, to the owner of the boiler nor to the man in charge of it; and if he does so, he does it on his own initiative, as a mere matter of convenience to the assured—any such report or statement or suggestion being of an unofficial nature, like an ordinary conversation between man and man. The real report of the inspector is made, after the inspection, to the insurance company; and this company, in turn, usually makes a report to the assured, although it does not agree to do so, unless a dangerous defect has been found. The report made by the insurance company to the owner, while it will ordinarily conform with the report received from the inspector, does not necessarily do so, and may even contradict it absolutely. The judgment of the inspector will not be reversed without good reason, but the insurance company will naturally base its own report upon the entire evidence in its possession, rather than upon the opinion of one man only. For example, the boiler may have been under examination for a number of years by other inspectors, while the man making the report under consideration may have seen it on this occasion for the first time, so that he may not be in position to estimate correctly the rapidity with which the boiler is undergoing deterioration; or it may be that a defect, considered by him to be of minor significance, will be construed by his superiors as having more serious import.

Putting the Risk in Force

SOLICITATION. In putting a boiler insurance policy in force there comes, first of all, the usual work of solicitation. This is often accomplished by direct conference between the agent of the insurance company and the owner of the boiler or his immediate representative. Sometimes, however, the insurance interests of a corporation may be placed in the hands of a broker whose knowledge of the subject is supposed to be useful to the corporation, and in cases of this kind the agent of the insurance company confers with the broker. There is nothing distinctive about boiler insurance in this aspect, and hence we shall dwell upon it no further.

FACE OF POLICY AND PREMIUM. It was long the custom of boiler insurance companies in this country to write their policies for amounts approximating to \$5,000 per boiler, so that a plant with a battery of four boilers would carry a policy for something like \$20,000. It is now the usual practice, however, to base the amount of the insurance upon the damage that could reasonably be expected in the event of an explosion, and the face of the policy is, therefore, determined by considering the nature of the business, the location of the boilers, the number of employees exposed to danger, and other like circumstances.

An agreement having been reached upon this point, it remains to fix the premium that shall be paid. This must evidently be sufficient to cover the actual cost of making the inspections, and to cover the loss that experience indicates can be expected, in the long run, upon boilers of the character under consideration. Each premium must contribute its share, too, towards the necessary administrative and agency expenses of the insurance company, and there must be a reasonable margin of underwriting profit in the transaction as well. When the amount at risk was about \$5,000 per boiler, it was found that a rate of 1 per

cent. of the face of the policy was a proper average charge for carrying the insurance for a period of three years, and this rate is used for determining a nominal premium, which is then subject to such modification as the special circumstances of the risk may indicate. Some classes of business, for example, are known to be more prone to boiler explosions than others, and some types of boilers give more trouble than others. The inspection cost is a heavy item in a properly conducted boiler insurance business, and it is plain that an isolated boiler, which would call for a considerable amount of time on the part of the inspector, and put him to a large traveling expense, ought to pay a higher rate than a boiler that is more accessible, or than one which belongs to a battery, several of which can be inspected on one and the same visit. If, on the other hand, the face of the policy is largely in excess of the nominal \$5,000 per boiler, the rate can often be made correspondingly less than 1 per cent. for three years. This is because the inspection expense is of the nature of a fixed charge, not varying with the face of the policy, and the increased charge for the higher amount of insurance depends upon nothing but the extra hazard to which the insuring company is subjected by the possibility of a loss involving the increased sum. The determination of the rate or premium under these varying circumstances is too complicated for further discussion here. In fact, it is sometimes difficult to determine the premium with fairness to all concerned, because to a certain extent every case must be a law unto itself.

THE FIRST INSPECTION. When the nature of the policy, the amount of insurance, and the premium that is to be paid have been determined, one of the insurance company's inspectors visits the plant. He examines the boilers with care, both internally and externally, and takes the dimensions of all parts that are under stress,

so that his company can satisfy itself as to the apparent safety of the boilers at the pressure that the owner desires to carry. It is often said that the only boilers that insurance companies will cover are those that cannot explode, but this is not the right way to look at the case. No man wants his boiler to explode, and no man in his right mind wants to operate a boiler at a pressure too close to the limit of safety, as determined by calculation. There are many unavoidable hazards in the use of steam, and it is to these that the insurance legitimately applies. There is no premium that is great enough, looking at the subject from a sane and conservative point of view, to cover a boiler that is believed to be more or less likely to explode. A boiler insurance company that did not conduct its business on this general principle would not only soon go to the wall, but would also be subject to just and severe censure: and a boiler owner who did not look at the matter from this same point of view would find, in the event of an accident and subsequent damage suits, that he would receive scant consideration from a jury. When an inspector pronounces a boiler "safe," he merely means that he has satisfied himself that there is no cause that he can foresee that is likely to lead to explosion. No boiler can be regarded as "safe" in any other sense.

If the inspector approves of the boiler, his opinion and his measurements are transmitted to some higher authority in the insurance company for review. The routine here followed varies somewhat in the different companies, but an official decision as to the apparent "safety" of the boiler is presently reached, and if this decision is affirmative, the policy is issued and the insurance comes into force.

Subsequent Course of the Risk

ROUTINE INSPECTIONS. Inspections are made of the boiler from time to time, throughout the life of the policy,

so that the insuring company can assure itself that the boiler still remains safe, in the sense explained above.

These inspections are of two kinds, which are known respectively as "external inspections" and "internal inspections." The external inspection is usually made when the boiler is in actual operation, and the inspector endeavors to visit the plant when he is not expected by the man in charge. He then looks about to see whether or not the boiler is being properly handled, and satisfies himself that the various attachments that are intended to insure the safety of the boiler are in good working condition, paying attention particularly to the safety-valve and to the apparatus for indicating the level of the water in the boiler. He also notes the pressure of the steam at the time of his visit, to assure himself that the said pressure is not in excess of the limit that is allowed in the policy.

The internal inspection is made when the boiler is out of service and empty. The regular attendant prepares the boiler for examination by cooling it, removing the soot and scale as well as he can, and taking off the man-hole plate and the handhole plates. The inspector goes into the boiler with a light and examines the tubes, braces, rivets, plates, flanges, feed pipe, fusible plug, and all other parts that may be accessible, tapping them with a small hammer as he may deem it advisable to, and assuring himself in general that everything is in good condition, so far as he can ascertain from a direct examination on the inside. He next crawls underneath the boiler on the outside, examining its exterior surfaces at every point where they can be seen, and here also he looks for cracks, leakage, imperfect rivets, and many other possible defects that his experience has shown him to be likely to occur. He also attends to the various fittings and attachments as carefully as when making the internal inspection.

When his examination is complete, the inspector prepares a report which he transmits to his company, and subsequently the insuring company transmits its own report to the owner of the boiler as explained in an earlier section, and subject to the limitations there set forth.

THE HYDROSTATIC TEST. There is a method of testing steam boilers, known as the "hydrostatic test," which consists in filling the boiler entirely full of water, closing all openings, and then pumping in a small additional quantity of water. By this means the pressure in the boiler could be carried up to the bursting point, if it were desirable to do so, and without any danger in case some part of the structure should give way. In actual practice it is customary, when applying this test, to run the pressure up to about fifty per cent. greater than the working pressure that the boiler is to carry. Under this test leakages may develop, or the boiler may become visibly deformed, or some part of it may actually fracture. If nothing of the kind occurs, it is inferred that the boiler is safe, so far as can be ascertained by this form of test. Some engineers greatly favor the hydrostatic test, and regard it as the most satisfactory one that can be applied. This opinion is not shared by the insurance companies, however, because experience has shown that an inspector, with his eye and ear and hammer, can judge of the condition of a boiler far better than he can by applying a water test. The water test nevertheless has its uses, and is particularly valuable upon new work, where it may be applied with advantage in addition to the regular eye-and-hammer inspection. In particular, it gives valuable evidence respecting the tightness of the joints and connections. Upon old boilers, however, the hydrostatic test should be applied only by an experienced man, and with due regard to the danger of damaging the boiler by run-

ning the pressure too far beyond the limit that it is to carry in its regular operation.

FREQUENCY OF INSPECTIONS. The frequency of the inspections varies somewhat with the character and location of the risk. Sometimes two internal inspections are made per annum, and no externals are made at all. Sometimes one internal and three external inspections are made per annum. But in all cases the insurance company exercises its own judgment as to the frequency with which these examinations are to be made.

If, in the regular operation of the plant, the attendant observes any unusual behavior of the boiler, his employer is expected to notify the insurance company, in order that it may have an opportunity to send an inspector to make a special, or extraordinary, examination, to determine the significance of such behavior.

MINOR ADVANTAGES OF INSURANCE. There are many minor advantages to be derived from boiler insurance, in addition to the greater security from explosion that the inspections afford, and the assurance of indemnity in case of a loss. For example, the continued watchfulness of the inspector, and his detection of small defects in their first stages, tend to minimize the cost of repairs by enabling the owner to put his boiler in the best of condition before its deterioration has proceeded far enough to make the repairs more than trivial. Hence insurance tends to prolong the life of the boiler, and it may be worth all that it costs, for that reason alone. Again, much valuable mechanical advice can often be had from the insurance company, free of expense. Some companies furnish their patrons with plans and specifications for the installation of new boilers, and even supervise the construction and erection of such boilers for a trifling additional fee. Some also analyze troublesome boiler waters for their clients, to see what can be done to correct the difficulties.

ADJUSTMENT OF LOSSES. In the event of a loss, the boiler owner who is not insured often finds himself confronted by exceedingly vexatious conditions. In addition to his own direct property loss, he may find himself liable to damage suits, and in such cases the assistance of the insurance company, with its extended experience, is exceedingly valuable, and by its aid adjustments are often reached which otherwise would not have been possible. These services are particularly appreciated when, as often happens, the total loss is materially in excess of the face of the policy.

There is little to be said respecting the settlement of damage claims directly between the insurance company and the boiler owner, for here the conditions are closely similar to those that obtain in other forms of insurance in which indemnity is paid for property destroyed. The insurance company and the boiler owner agree upon the value of the property if they can, and if full agreement cannot be reached otherwise, disinterested appraisers are appointed, whose decision is binding upon all points.

Finance

ANALYSIS OF UNDERWRITING INCOME AND DISBURSEMENTS. The fact that the loss ratio is small in wisely conducted boiler insurance leads many to believe that the business is correspondingly profitable. Many companies that have tried it have found that this is not the case, for reasons that appear clearly when the expenses incident to the business are carefully examined. The Hartford Steam Boiler Inspection and Insurance Company is the only large concern of its kind whose underwriting statement can be fully analyzed so as to exhibit the various channels in which the premium receipts of such an organization are expended. The others do a miscellaneous business, and while their premium receipts and losses are given separately for their various lines of activity,

some of the other items in their statements are given only collectively, for the whole. From the statements of the Hartford company, as rendered to the Connecticut Insurance Department for the ten years ending with January 1, 1911, it appears that the net premiums actually earned and received by this company (for boiler insurance only) during the said period were expended as indicated in the diagram given herewith. The whole



ANALYSIS OF THE UNDERWRITING BUSINESS OF A STEAM BOILER INSURANCE COMPANY FOR TEN YEARS ENDING DECEMBER 31, 1910.

circle here represents the net cash premium income received for boiler insurance, and the several sectors represent, by their relative areas and by the figures attached to them, the percentages of these net receipts that were expended in the various respective ways indicated.

The large proportion of the whole that was expended

upon the inspection service will be particularly noted. Although no correspondingly complete analysis of underwriting expenses connected with boiler insurance can be made for other companies, it is certain that a large proportion of the premium receipts must *always* be expended in this way, if the business is to be conducted soundly, and acceptably to the assured. The insurance company cannot afford to simply "bet" the boiler owner that his boiler will not explode, this course being indefensible from either a financial or a moral standpoint.

In the diagram the line separating "Agency Expenses" from "Commissions and Brokerage," and shown dotted, is drawn from the data of the last two years of the decade considered, as the method now in use for classifying the items on the two sides of this line is different from that which prevailed in the first eight years. In the earlier portion of the period a larger fraction of the total sum comprised under these two headings was included under "Commissions and Brokerage." No other line in the diagram is affected by this change.

The item designated as "Miscellaneous" includes advertising, home office rent, and other sundry items, for which reference must be made to the original published statements. It will be understood, of course, that the *investment* side of steam boiler insurance is not considered in any way in this analysis, the object before us being to examine the underwriting branch only.

OUTLOOK FOR BOILER INSURANCE. Steam boiler insurance does not longer offer a promising field for other companies to enter. The number of boilers that are insurable is strictly limited, and, moreover, it does not increase in proportion to the growth of industry in other respects. Thus there is a marked tendency toward the use of larger boilers and engines, since increased size means greater efficiency in operation—

and increasing efficiency means diminishing boiler capacity in proportion to the output. Numerous hydro-electric installations are going up, too, in which mechanical energy, of enormous quantity in the aggregate, is generated from water-power. There is a pronounced movement, also, toward the introduction of gas engines for power generation, in plants where steam is not particularly needed, in quantity, for other purposes.

The competition of the numerous boiler insurance companies that are already in the field makes the cost of obtaining and holding the business heavy, as is shown by the diagram, and by this competition the obtainable rates have been forced down to a point where a reasonable underwriting profit can hardly be had, unless the business is managed with the skill and knowledge that can be acquired only by long experience. The net underwriting profit shown in the diagram is only 5.59 per cent. of the net premiums actually earned and received, and we may say, in general, that the profits of the older companies, who know the details of the business thoroughly, are not great enough, in view of the chance that is always present of a loss at any time that may destroy the accumulations of an entire year, to tempt any great amount of capital into the formation of new concerns, or into the extension of older ones so that they may embrace steam boiler insurance in addition to the other lines that they already carry. The net profit shown on the diagram corresponds to a gain of only about *seventy-two cents per boiler per annum*.

The literature of steam boiler insurance is quite limited. The following may be consulted:

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Reference may also be made to *The Locomotive*, a periodical published by the Hartford Steam Boiler Inspection and Insurance Company, where will be found a great deal of matter relating to steam boilers, and bearing more or less upon steam boiler insurance. *The Boiler Maker*, a monthly journal published in New York City, contains articles from time to time upon boiler inspection and kindred subjects.

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CHAPTER LXIII
SURETY AND FIDELITY INSURANCE

BY JOEL RATHBONE

Surety Insurance

THERE is no more interesting line of insurance than that of surety bonds, with its infinite detail, its difficult underwriting problems affording abundant opportunities for the exercise of a keen business judgment, and the many complicated and absorbing situations that arise both before and after the giving of the bond.

It is a difficult line to describe in an article of limited length, for it is not easy to classify, but it may be stated that the principal lines are contract bonds, court bonds and depository bonds and probably their importance, judged by the volume of business in each line, is in the order named. Many other bonds are written by a fidelity and surety company in its surety department, among which may be named license and permit bonds, excise, forgery, United States customs and internal revenue, and the many peculiar and unusual forms classified under the general head of indemnity bonds.

A contract bond, as its name implies, is a bond given to secure the faithful performance of a contract, and this contract, in the limited sense in which it is used by surety companies, includes only contracts for the completion of a building operation or some feature connected with a building or construction enterprise. There are three broad classes of contract bonds; bonds guaranteeing construction, bonds guaranteeing the furnishing of materials and bonds guaranteeing the maintenance of the condition of the work for a limited time after completion, and these are of importance in the order named. The form of bond

is practically the same for all classes, being simply a guarantee of the performance of the contract. Where companies are able to use their own printed forms, certain clauses are inserted for their protection, such as prompt notice of trouble on the work, limitation of time to bring suit and so forth. The very nature of the bond prevents the use of a cancellation clause for if the surety could resign at the first notice of trouble, of what use would be the bond?

It is of great importance, therefore, that the terms of the contract should be examined carefully. The time in which to complete should be adequate and the penalty for failure should not be excessive, and payment should invariably be made in cash or readily marketable securities without discount. It is customary for the owner to retain a certain percentage of the contract price as additional security, until completion, and this should be between 10 and 25 per cent. Less than ten does not provide enough incentive to a contractor, who might abandon the work, sacrificing the small retention, after having completed and secured payment for the easiest and most profitable part of the contract, while more than twenty-five is a hardship to the ordinary contractor who requires the money in the prosecution of the work.

On bonds to the government and bonds given in many states as well, included in the liability is a guarantee of the payment of all valid claims for labor and material used on the job, while in some states an additional bond is given for this purpose. This increases greatly the hazard assumed, and makes it more necessary to examine with the greatest care the financial responsibility of the contractor and if he sublets a portion of his work, as very frequently happens, that he require his sub-contractors to give to him in every case a surety bond covering the same liability that he is under to the owner.

The two essential features to consider in the under-

writing of these bonds are first, the nature of the work and second, whether the financial responsibility of the applicant for the bond is such as to insure his ability to complete.

All sorts of construction work are undertaken, from the building of a two-story frame house, costing a few thousand dollars, to the tunnelling of a mountain, the boring of a river, or the building of enormous dams, breakwaters and dry docks costing millions of dollars and involving engineering problems of the highest grade.

Any work that is experimental is, of course, extra hazardous and must be handled with the greatest care. The first subways built in this country were of this class. Tunnelling under the streets of New York City presented new hazards. The amount of rock likely to be encountered was fairly well known, but so imperfectly had the city, in times gone by, kept its record of sewers and water mains, that just what was to be encountered in this way was unknown; nevertheless the contract required the contractor to overcome without additional expense all such hidden dangers. In like manner the effect of the boring on abutting property was uncertain, many buildings having vaults under the streets likely to interfere and just what strengthening of walls and foundations would be necessitated was one of the many unknown problems which could not be worked out beforehand. That these dangers were real and not imaginary was proved in the Park Avenue section, where walls of houses cracked so badly they had to be taken down and an immense amount of extra work was imposed on the contractor, who encountered many more hazards, and far more expensive ones, than anticipated when making up his estimates, and the result was financial embarrassment. The construction of the dry dock at the Brooklyn Navy Yard is another of the many examples that might be given to show the danger of hidden hazards in experimental work.

Here the size of the work was unusual, as well as the difficulty of putting in strong enough foundations to support the tremendous weight. Two contractors, one after the other, failed and gave up the contract, and probably no more careful investigation was ever made of the conditions surrounding a contract than was made by the company acting as surety for the third and finally successful contractor.

In the hazardous class are placed building of aqueducts, caisson or coffer-dam work, building of locks, dams and dredging. The prosecution of such work is often interrupted and sometimes abandoned owing to the action of the elements, such as freshets in rivers and storms in the ocean, and there are instances where a contractor's entire plant has been swept away by one or the other, involving him in ruin and his sureties in grave difficulties. In some rivers in this country it is a simple matter at certain seasons to construct a masonry bridge, with the necessary caisson and coffer-dam work incident to the building of the piers, but woe to the contractor who permits his work to be delayed until the arrival of spring freshets, and woe to his surety who did not ascertain the character of the river before signing his bond.

The new concrete construction is another example of experimental work, although just what can be done with this material is now becoming better known, but the experience has been gained only after the collapse of many buildings. Many a contractor has attempted to increase his profits by economizing on the cement and using sand generously, with the result that the hardened mixture was unable to sustain the estimated load and the contractor collapsed as well as the building, entailing again a loss on the surety. Companies now seek to save themselves from this extra hazard by inserting a clause in their bonds relieving them from liability occasioned by structural weakness which may be occasioned by faulty

specifications or the weakness or failure to comply with these specifications.

The second essential, the financial condition of the contractor, his experience and ability, as the first, for a financially weak contractor, a job fails as often as does a financially strong contractor on a difficult job, perhaps oftener.

When a contractor applies for a loan, he should include in his application a statement of his financial condition, describes the contract he is about to perform, a list of other work on hand, and a list of important contracts he has performed for other companies this with a copy of the order that the company may examine and form an opinion of the nature and value of the work. To be an acceptable risk, he should have assets to offset his quick liabilities, equal to about 10 per cent. of the value of his uncompleted contracts and such contracts should not exceed more than five or six times his net worth. Contractors frequently include as an asset the value of uncompleted work, but this item should be disallowed. All items included should be verified, particularly deposits in banks, by inquiry at the institutions named, and the value of real estate should be likewise investigated to see if it is the name of the applicant, for a notable characteristic among contractors is to include real estate as an asset, a wife, and this, of course, can not be taken into account in the event of a loss. Nor can real estate which is exempt by homestead law be taken into account as an available asset. Care should be taken to see that the value is not overvalued. It is a curious fact that the value of a house is invariably worth more in the eyes of a contractor than the opinion of an expert on values. Many contractors are paid in securities of various

infrequently figure in the asset column. Care should be taken to ascertain their value as well, and their availability in the event of the financial embarrassment of the contractor.

In writing bonds guaranteeing that certain articles will be furnished, known as a supply contract, more leeway may be given, for the contractor should know the cost of production, and, therefore, the price at which he can sell at a profit. Care should be taken to avoid all efficiency guarantees, such as a contract to furnish an engine that will drive a boat through the water at a certain rate of speed, also guarantees that the article furnished does not infringe a patent controlled by someone else on a somewhat similar article. Care should also be taken to see that payment is not made in advance of delivery of the supplies.

In writing maintenance bonds, usually required on pavements, and which guarantee against defects, the kind of pavement to be laid must be investigated as well as the volume of traffic over the street in which it is to be laid, and whether it will be affected by the ice, snow or cold weather usual in the locality. Few companies are writing bonds of this nature which cover a longer period than five years, although much longer terms have not been unusual in the past.

Court bonds, although executed by surety companies, are not underwritten on the insurance principle. In all forms of insurance the premium is accepted in payment of a hazard assumed while on court bonds the premium is a payment for a service performed. This is because, theoretically, every risk is secured.

There are two classes of court bonds, the fiduciary bond and the bond given by a party to a litigation to enable him to pursue a legal remedy. In the former class, the applicant invariably joins in the bond as principal and binds himself to faithfully perform

the trust reposed in him, and the company signs the bond as surety, thereby guaranteeing the observance of the conditions of the bond. Such bonds are required of administrators of estates of decedents, and in some states of executors as well, of guardians of infants, incompetent persons and trustees under wills, in some states those trustees who are appointed by the testator and in all states those substituted by the court for deceased trustees for it often happens that a trustee dies many years before the trust terminates, in which case a new trustee is substituted by the court.

In bonds of this class the surety company secures itself against loss by a joint control of the assets of the estate. When the fiduciary upon his appointment applies for his bond he enters into an agreement with the surety company which provides that he shall deposit all cash which he receives in his trust capacity in a bank or trust company, named in the agreement, and that he will issue no checks against this account except upon the consent of the surety company, and that such consent shall be stamped across the face of the check and the bank is immediately notified of this agreement and directed not to pay any checks unless countersigned as described. The agreement also provides that all other assets of the estate, susceptible of such a disposition, shall be deposited in a safe deposit box to which access shall be had by the fiduciary only when accompanied by the representative of the company, and the safe deposit company is likewise notified immediately. In this way the surety company places itself in a position to supervise all the acts of the fiduciary; not alone to prevent acts of dishonesty, but to prevent as well any false steps by a principal who may not fully comprehend his duties and his powers, but who may, by an investment not permitted by law or by an unauthorized payment, subject the estate to a loss and himself and his surety to a resultant liability.



This joint control arrangement, while an excellent form of protection, is not infallible, for an agent who may be representing the surety company in countersigning checks and visiting safe deposit boxes, may act in collusion with the fiduciary to rob the estate; or, as more frequently happens, he may exercise joint control in such an unintelligent or careless manner that it loses its effectiveness; or a fiduciary receiving funds of an estate daily, as in the case of a receiver conducting a business, may not comply with his agreement to deposit these funds in an account subject to counter-signature, but to his personal credit instead and may embezzle this money. Nevertheless, this form of protection has been found to be a great safeguard and thoroughly workable and has undoubtedly saved surety companies hundreds of thousands of dollars in losses. Its propriety and effectiveness have been recognized by the government which permits the execution of a fiduciary's bond in an unlimited sum when joint control has been arranged, thus putting this form of protection on a par with collateral security which is allowed as an offset against exposure over the 10 per cent. limitation.

The underwriting of these risks is difficult and should not be undertaken by a man who has not had wide experience and some technical training. Lawyers are often employed for this purpose and some of them make excellent underwriters, but generally their view point is too technical and they are too prone to see elements of risk that are not apt to arise in actual experience, and the result is a too restricted development of the business. On the other hand, an insurance man, without special training in this line, is apt to lack that conservatism which to too great an extent governs the underwriting of men of the legal profession.

Attention to the risk does not cease by any means with the execution of the bond and in this respect also the line differs from all other forms of insurance. It requires

just as much ability and experience to supervise a joint control case after the risk is on the books as it does to pass on the application in the first place. If the surety is to escape liability, acts both of omission and commission must be watched, for a trustee may as readily create a loss on his bond by failing to keep insured against fire real estate in his charge as by investing the funds of the estate in poor securities. Likewise a receiver is charged with the duty of collecting sums due from debtors of the estate in his charge and a failure to exercise due diligence in the collection of these claims means a liability. An administrator may pay an undertaker's bill which on an accounting the court may hold to be excessive and out of proportion to the value of the estate with the same result. To enumerate all such cases would be to compile the statutes of all the states on the duties of a trustee, and read the thousand and one decisions of the courts bearing on the matter, but enough has been said to show the danger lurking in bonds of this class and the necessity for carefully safeguarding the interests of the surety company after the execution of the bond.

In underwriting the risk, several important features must be kept in mind. The principal should be honest and intelligent, and if financially responsible, so much the better, but this is not essential. It is important, however, that his lawyer be able and high class. Good underwriters have learned to write fiduciary risks generously for clients of law firms of the first order, and to look with exceeding care and even suspicion on applications from clients of lawyers with shady reputations, since so much depends on this feature. The assets should be of a depositable nature, such as stocks or bonds; a running business as a portion of the assets is a decided danger signal, likewise an insolvent estate or one with a large indebtedness. When an administrator is indebted to the estate, care should be taken that it be paid at once, otherwise a liabil-

ity may accrue, for the courts have held that such a debt matures at once and the first duty of a trustee is to collect from himself what he owes the estate.

Bonds of receivers and trustees in bankruptcy are excellent risks, for the term of a receiver's bond is usually short and the appointments made by the United States district courts throughout the country, which courts handle all bankruptcy matters, are notably high class, and the trustee who succeeds the receiver is usually the selection of the creditors, and he acts under the direction of the referee, who under the bankruptcy law, must countersign all his checks; thus has the protection afforded by this feature of the joint control plan been recognized and adopted by Congress.

Bonds of guardians and trustees are less desirable, principally on account of their long terms. A guardian's bond often runs twenty years, while the duration of a trustee's bond may be even fifty or sixty. While no court bond has a cancellation clause, the surety can now, in most states, secure its relief from further liability on bonds of the fiduciary class by a legal proceeding which necessitates an accounting by the principal for a complete discharge. Long term bonds with home office joint control are usually safe, but not so with joint control lodged in the hands of agents, for twenty years sees many changes in the field force, and the new man can never be relied upon to take the same interest or care in his "inherited" cases as in those risks which he himself puts on the company's books, and frequently, at smaller points, through failure to send proper notices to banks and safe deposit companies, joint control is lost in the change. Auditing joint control cases is coming more into vogue and companies are now employing traveling auditors who go from place to place checking up all estates for which the company has made itself responsible.

Bonds of the second class are those numerous obliga-

tions required of litigants in pursuing the remedy of the courts and required by the statutes, both the code of civil procedure and the criminal code. These bonds have no termination clause, nor can they be cancelled by a legal proceeding as the bond of a fiduciary, and a company giving a bond superseding a judgment pending an appeal, must be prepared at any time to pay this judgment unless it be reversed by the higher court, on the happening of which event the bond is ipso facto cancelled, and the same thing is true of other bonds of this class. If, in a replevin action, the surety guarantees that the plaintiff will return the chattels he receives through the office of the sheriff in the event that the court awards their possession to the defendant, it is the obligation of the surety to pay the money value of them upon the failure of the plaintiff to comply and to pay as well the damages occasioned by their wrongful replevying, and having once assumed this obligation, the surety must carry it out "when, if and as" called upon to do so, to use a Wall Street expression. Likewise, bonds to discharge attachments, release mechanics' liens and stipulations for value in admiralty proceedings, in which the bond stands in place of the released security for the payment of the sum awarded on the trial, are uncancellable and must remain outstanding until the determination of the merits of the litigation, and if the principal will not or is unable to perform the obligation the court imposes, the surety company must do so up to the full limit of its bond.

This being so, it is evident the surety company must be satisfactorily secured before writing bonds of this nature, for it must be borne in mind that the premium is a service charge only and not a payment for hazard assumed, the service being the opportunity afforded the litigant to pursue his remedy in the courts, and the relief from the necessity he would otherwise be under of asking two or more friends to sign personally for him, thereby

making it likely that he will be called upon in turn to reciprocate by signing later for his friend a similar or even more hazardous bond.

Were the premium to be based on, and accepted for, the hazard assumed, it would of necessity be so large that no litigant would pay it, for the great majority of judgments are affirmed and many, many judgments are never satisfied.

Money is often taken as collateral, also stocks and bonds and real estate security. In passing on security offered a good underwriter will assume in his mind that the bond has been forfeited, and ask himself whether he can take the proposed collateral out in the market and sell it at once for enough to pay the liability. This is the true test, for a company which advances its own money to pay the debts of other people soon finds its own bank account running short and in its place slow assets not permitted by the insurance department to be carried as assets. Therefore, collateral must be good, not subject to wide fluctuations, and readily marketable. Companies frequently accept in lieu of collateral, the indemnity agreements of the applicant and third parties. In many instances this is perfectly safe and justifiable, but the practice of some of the more inexperienced underwriters in accepting indemnity on large bonds of a hazardous class is indefensible and can lead only to disaster.

Depository bonds are given to secure the prompt repayment of funds deposited with banks and banking institutions and run into very large figures, a bond of a quarter of a million dollars being quite common. These bonds are required by states and municipalities, by counties and many public officers throughout the country, and their desirability from an underwriting point of view, depends largely on the general banking situation. In average times, when money is fairly cheap and business is being conducted at a reasonable pace,

these bonds are very desirable, but when the boom is about to collapse, credits are very much extended, and the banking situation is strained, these large liabilities constitute a grave menace. The surety company then has "Hobson's choice"; it can cancel its outstanding depository bonds, thereby constricting banking assets and aggravating the situation, perhaps even precipitating a panicky condition, jeopardizing its bank fidelity business, but saving itself from severe losses; or, it may endeavor to secure collateral on outstanding bonds for the smaller institutions and on others simply rely on the care with which its risks have been selected and hope that lightning will not strike. It must be remembered that large and strong banks occasionally suspend payments, in which cases, although there may be full salvage, the surety company must pay out in the first instance the full amount of its bond, or the full amount of the deposit secured by the bond, whichever is the smaller, and this situation is bound to occur in panics. In 1907 sums aggregating many hundred thousands of dollars were paid out on depository bonds covering deposits in banks in New York City alone, and this within a space of a few weeks. Although full salvage to a penny was recovered by the companies at a later date, this did not help the situation at the time. Had the panic been as severe at other banking centres as at New York, the outcome would have been questionable.

Lines carried on individual banks generally run from 10 to 25 per cent. of the sum of its capital, surplus and undivided profits, depending upon the age of the bank, the quality of its management, its progress as shown by its statements covering a period of years and the relation shown between cash and deposits, and deposits and capital.

License and permit bonds include all those bonds required by the statutes of various states and municipal-

ities enabling the licensee to conduct some business, or pursue some employment, such as conducting an employment agency, a saloon, drug store, pawn-broker, or a plumber or sewer tapper. Bonds of this nature are very numerous and vary greatly in the hazard involved. Perhaps the largest branch of this line are the bonds given under the excise laws of the various states. These bonds are ordinarily about \$10,000 in amount, and the line has been a profitable one, although necessitating a high rate of premium.

Permit bonds are of somewhat the same nature. They cover damages which may accrue on account of privileges granted, such as the permission given by a city to store explosives and so forth. These bonds are written very freely for applicants of good reputation, and while there is a great difference in the hazard between bonds required in one state and bonds required in another of precisely the same nature, nevertheless, generally speaking, they may be included among the less hazardous lines of suretyship.

There is another bond given, known as the freight charge bond, of which a number are issued. This guarantees to a railroad or transportation company the payment of freight charges on goods transported and delivered to consignees. This is a financial guarantee and should be written for strong applicants only, and then in limited amounts.

Many bonds are given which guarantee the payment of rental under a lease. These are generally very hazardous, particularly when connected with some promotion enterprise. Bonds are rarely required of old established firms whose ability to pay rent is well known, consequently the applications that are made to a surety come, generally speaking, from lessees whose ability to pay rent is not well regarded by the lessor.

Bonds guaranteeing against forgery is the latest

line of insurance written in this country. These bonds are purchased by banks to protect them against loss occasioned by forgery of checks or drafts which they take in the course of their business. Sufficient experience has not yet been obtained to speak definitely of this line. Suffice it to say that it was written at its inception about a year ago by two companies; one company has since abandoned it on account of its unprofitable nature, while the other, a large New York company, is still conducting the line at a satisfactory profit. It is a bond that sells well and seems to have found a place in the business world.

Many bonds are given to the government in the nature of surety bonds, the most important being bonds guaranteeing the payment of customs duties and internal revenues. There are various forms applicable to the different contingencies which arise, and although the bonds are frequently in large amounts the experience has been so satisfactory that a very small premium charge per thousand is made for bonds of this class.

There are very many more bonds coming under the classification of surety bonds which might be described, but those which have been mentioned above are the really important lines, and the only ones of a kind large enough in volume to constitute a distinct class.

Fidelity Insurance

The business of guaranteeing the honesty of a person is called fidelity insurance.

Commencing about the year 1879, fidelity bonds were written for the first time in this country. During that year bonds with an aggregate liability of \$45,000 were executed by a prominent New York company, still in business, but under another name, and with large resources and an extremely profitable business. Since then the business has been greatly developed until today

approximately \$7,000,000 are paid annually to bonding companies for the protection of employers against loss through dishonesty of perhaps as many as 3,000,000 employees, on bonds in the aggregate of perhaps \$3,000,000,000.

The business has been divided for convenience into three classes: bonds in favor of private employers, such as merchants, banks and railroads; bonds in favor of states, counties and municipalities; and bonds in favor of the United States government, the second class being known as public official business, the last as government official business. The first has proved the most lucrative and has been more eagerly sought by the companies carrying fidelity lines.

Generally speaking, the underwriter in passing on an application for a bond of either class, will consider primarily two things: first, the temptation to which the applicant will be exposed in his bonded capacity; and second, what record the applicant has made in the business world which entitles him to an "honesty credit."

While, to the general public, a bank clerk would seem a dangerous risk because he works in a business house where stealable articles accumulate and because the newspapers frequently record thefts by bank cashiers and clerks often for such large sums that the institution is obliged to close its doors, nevertheless such risks are regarded with great favor by underwriters because strange as it may appear, the opportunity to steal is not great.

In a bank whose working force is properly organized one clerk, or one group of clerks, must check up and prove daily with another group, and while those in the tellers cage always have the opportunity for a "grab and a run," they cannot, in a properly organized bank, steal from day to day and year to year until their thefts aggre-

gate large sums, and it is these cumulative losses that the good underwriter fears.

On the other hand, collectors or salesmen on commission are not desirable lines, on account of the difficulty of checking them up, and jewelry salesmen who carry samples are exposed to extraordinary temptations, for the opportunities for stealing both cash and merchandise are unusual.

After a consideration of the opportunity, comes the question whether the applicant's character is such that he will so conduct himself as to cause no liability to his surety. It, therefore, becomes the duty of the trained underwriter to examine his record and sort out the honest men from the thieves. Just as the medical examiner of a life insurance company must sort out the men with defective hearts, or livers, so must the fidelity examiner sort out the men with defective intellects or morals, and he has a much more difficult task. A doctor can put his ear to a man's chest and tell to a certainty that the heart beats true, but who can turn on a man's brain the light that will show the present or future thief? How a man has conducted himself in the past is an indication of how he will conduct himself in the future, and it is on this indication the underwriter must base his judgment. He inquires of each employer the applicant has had for at least ten years last past. References are called for on the application and to each name given is sent a blank form on which questions concerning the character and habits of the applicant are asked and specific replies required. A question always asked is whether the applicant gambles or uses intoxicating liquors. An affirmative answer to the former prompts further inquiry, but the underwriter of today passes more readily the man who states frankly that he drinks in moderation than the man who simply says "no," for he probably lies. His age is considered in connection with the responsibilities he is to

assume in his bonded capacity and if he be a married man and especially if he has children, his greater steadiness is assumed. His property holdings are also important for the strata he occupies in life may be roughly estimated by his means, and because a man who has money, and consequently some position, is, generally speaking, a better risk, for he is less liable to steal, and lose his money and position as well as his liberty, than a man who has nothing to lose but his liberty and the respect of the community in which he lives. Experience also plays its part, for age and experience are the elements that make character, and the underwriter who can place these essential features in the balance and determine whether age and experience plus antecedents, reputation and position, outweigh the degree of temptation or opportunity to which the applicant will be exposed, is the underwriter whose services are earnestly sought and whose time is well paid.

Fidelity companies are often imposed upon by spurious references and occasionally a man who has been bonded and upon whose bond a company has paid a loss has later applied to the same company under a different name, and has again, by reason of dishonest acts, imposed a fresh loss on the same company.

This has happened more frequently on railroad risks than on any other lines of business. A man in the position of freight agent who has stolen from the railroad by which he was employed and who has been discharged, but who has escaped other punishment, changes his name and moves to another place. Here he again applies for employment, referring to new made friends for recommendations and falsifying his application as to former employers. Occasionally these risks have been accepted and in some instances a second loss has been paid on the same man.

In public official and government official business, the

same primary questions arise, the character of the applicant and the opportunity to steal. There is one deterrent making for safety, however, which is not present in general fidelity lines, and that is the usually conspicuous position occupied by the bonded man, as for instance, the county treasurer. He is more or less constantly in the public eye; he is the servant of the residents of the county and his business is their business, the funds he handles, their funds; his doings and the more important transactions in his office are reported in the newspapers from time to time, and he conducts his office in the bright calcium of publicity. The greater his eminence, the greater his fall, and the usual occupant of such a position, often an aspirant for higher political honors, exercises great care of the funds in his charge and so conducts himself in his private life as to give rise to no suspicions concerning his character or morals. Again, his election by popular vote is his best reference. He probably has been through a severe campaign and the worst that is known about him has been published and spread broadcast. His record has been carefully examined by his opposing candidate and his opposing party, and the people, the court of last resort and the fairest court in the country, have endorsed his candidacy and voted him into office.

But there are other public official risks not so good. Bonds of sheriffs are on the prohibited lists of many companies, for they may make themselves and their bondsmen liable by wrongful acts committed, however, in good faith, for here we have a bond, like nine-tenths of public official bonds, covering not only larceny and embezzlement, but a bond following the statute pursuant to which it is given and which covers the faithful performance of the duties of the office, a much more dangerous obligation. Perhaps 90 per cent. of bonds given for public officials and government officials are drawn in

accordance with some statute making the giving of such bonds obligatory, or in accordance with some departmental rule, and in consequence these bonds are much broader in their scope, for law makers require a bond guaranteeing the faithful performance of the duties of the official instead of the bond covering alone the larceny hazard, with which most private employers are satisfied.

Speaking broadly, there are three forms of fidelity bonds furnished by the bonding companies: first, the larceny or embezzlement bond; second, the culpable negligence bond; and third, the faithful performance bond.

In the first class, the employer must prove that he has sustained a loss through an act of dishonesty on the part of the employee, and that such dishonest act is important enough to bring it within the legal definition of larceny or embezzlement. The law in the several states is well settled on this point, and if there be no dispute as to the facts it becomes a simple matter to determine whether the commission of the act through which the loss arose is one for which the bond is responsible. But there are other questions to be determined. When the applicant applies for his bond, the employer files a statement as well, and this statement certifies to several important facts, among which special attention may be called to the plan to be followed in checking or auditing the accounts of the employee, whether regular statements are sent to debtors for the purpose of checking book balances, whether bank checks require the countersignature of some other employee or whether funds may be withdrawn from the bank on the sole signature of the applicant, whether the applicant will or will not have the sole custody of valuable securities, whether when accounts were last checked the applicant's books, cash and so forth were in balance, and other important facts which appeal strongly to the underwriter in passing on the risk, and these statements

form warranties and, with the application, form the basis on which the bond is sold.

Disputes often arise over these warranties. Employers fail to read their policies and do not know, or fail to realize, that they have accepted certain obligations on their part, and that their failure to perform these obligations both legally and equitably releases the other party to the bargain from liability should the employee become a defaulter.

There are also certain conditions named in the bond by which a bonding company limits its liability. A discovery of the larceny must be made during the term of the bond or any continuation thereof, or within a period of months, usually six, after its termination or cancellation, and prompt notice of such discovery must in every instance be given to the surety. The reason for this is obvious.

Bonding companies which sustain a loss invariably attempt to jail the man who is the cause of it, and this is done for two reasons: first, a man who occupies a position of trust is less apt to steal from his employer if he feels certain that the result will be a term in jail, and the prosecution and punishment of one man improves the risk carried on the next, and this fear of prosecution creates what is called the "moral effect" of a surety company bond. The individual bondsman who has no other risk at stake and who is a friend of the thief is naturally more forgiving, and employers are usually loth to institute criminal proceedings, hence a great deterrent present when a company is surety, is completely absent when an individual is bondsman. The surety company by insisting on prosecutions, with a bond providing that the employer shall lodge a complaint on the demand of the company, has made itself a terror to wrongdoers, with a resultant reduction in its loss ratio to an incalculable extent.

Second, as a result of this prosecution, salvage is frequently recovered. When the thief sees jail staring him in the face, every nerve is strained to secure the money necessary to make restitution, every wire is pulled, every avenue of escape is followed, with the frequent result that some relation, a parent, an uncle, or even a cousin, appears with the funds, the repayment of which usually mitigates the punishment of the unfortunate individual. This is the unpleasant, even the harrowing part of the business. To see a poor widow mortgage her home, perhaps all she has, or to see an old man give up the savings of a life time to keep some scalawag out of jail, who might much better be in it, is not an agreeable sight.

This shows the importance of that clause in the bond which provides for immediate notice of the discovery of the theft. The company at once steps in and lodges a complaint through the employer, and the thief is apprehended; failure to give immediate notice often results in the escape of the offender with greatly diminished chances of salvage, hence the employer who fails to give immediate notice damages the position of the surety, fails in his part of the bargain and cannot recover. The time in which to file proofs of loss and in which an action may be brought is also limited by the terms of the bond.

The culpable negligence form, much in favor with railroads, is broader and more hazardous. This bond contains the same clauses as the larceny and embezzlement form with respect to discovery of loss, notice to the surety, time to sue, and so forth, but it is necessary to prove culpable negligence only in order to recover. What constitutes culpable negligence is not nearly as clearly defined as the act of larceny or embezzlement and consequently more disputes arise in the settlement of claims. If an employee who has secured his employer against loss arising from culpable negligence on his part should leave his cash box on his desk overnight instead of plac-

ing it in the safe provided for the purpose, and funds are abstracted from it during this period, the bond would become liable for the loss although the honesty of the employee were unquestioned. In this case the duty of the employee is clear and he has failed to exercise reasonable care in handling his employer's money. Many cases arise, however, in which the duty of the employee is more or less obscure, and whether the degree of negligence is sufficiently great to bring it into the class of "culpable negligence" is often the subject of disputes which are sometimes carried into the courts.

The third form, the statutory form, is the most hazardous of all for this bond guarantees the faithful performance of the duties of the official and this may embrace many things, including the collection and disbursement of funds, and a faithful accounting and paying over of the balance. In many cases it includes the faithful keeping of funds as well. Should a county treasurer in certain states, for instance, deposit his collections in a bank of good repute, and should this bank fail with a consequent loss to depositors, a liability would fall on the surety, for the treasurer has failed to keep safely the funds of the county. This hazard is covered by a requirement that the bank holding the funds shall give a depository bond.

When the company giving the fidelity bond transacts also a surety business, it not unfrequently carries the depository risk in the latter department. It sometimes happens that a burglary insurance is combined with fidelity insurance in the same way. For instance, the statutes of the state of California, curiously enough, require some financial officers to carry the balance on hand in gold in a safe in the office. These men are personally responsible for the safe-keeping of this gold, and the faithful performance bond given by the surety company, therefore, covers this risk. For protection, the surety

company requires the official to take out burglary and fire policies, and here it sometimes happens also that the surety company, if it be transacting a burglary business, as many surety companies do, is carrying this risk in another department. It is covering the hazard for a premium, however, which would not be the case if the fidelity bond were given at the customary rate and no burglary insurance required, for in such case the hazard, and a very real one, would be carried without charge. Another hazard often present on faithful performance bonds, and never covered by the larceny or embezzlement bond, is the liability for acts of subordinates. An assistant treasurer of the United States, for instance, in charge of a sub-treasury with hundreds of clerks working under him and having in their possession millions of dollars in cash, is responsible for every penny, not stolen, but missing, and his surety, in signing his bond, carries a risk on each one of these men. The wise sub-treasurer will require a bond of each man in order to protect himself, and the well managed surety company will decline to furnish the sub-treasurer's bond unless he does so protect himself.

There is still another fidelity bond which should be mentioned. A leading New York company has invented what it called a policy of fidelity insurance; the main difference between this and the fidelity bond being the acceptance of the risk without the usual application, and this enables an employer to cover the honesty of his employees without the latter's knowledge. It often happens that an employer has in his service a man in whom he reposes great confidence; he may be a relative, an elderly man, and perhaps may have satisfactorily discharged the duties of his position for many years, yet the employer has learned from the experience of others that it is the trusted employee who goes wrong to the great loss of his employer and that good business principles require him

to protect himself against such dishonesty, yet he hesitates to ask this faithful assistant to make an application to a surety company for a bond which would necessitate the giving of references and the usual investigation. To fit such a situation, the fidelity policy was invented. The company writing it charges a slightly higher premium to cover the extra hazard which it assumes by accepting the risk without investigation, but this extra hazard is slight, as ordinarily only high class men are covered by this plan. The terms of the policy are practically identical with the usual larceny and embezzlement bond.

Although there is a wide difference in the practice of companies as to the amount of any one risk carried, the custom is to reinsure as in other lines. The laws of several states limit the amount of exposure, and the United States government by rule fixes such limit at 10 per cent. of the capital and surplus of the insurer. The government has no legal authority for this action, but as with a private obligee may accept or decline any bond tendered to it, and the treasury department, before which such matters come, has taken the arbitrary position, not only that it will decline to accept any bond on a government official which exceeds 10 per cent. of the capital and surplus of the executing company, unless the excess is satisfactorily covered by reinsurance, collateral or otherwise, but that it will decline to accept any bond whatever of any company which carries liabilities in excess of such limits and this, as a matter of practice, has resulted in government supervision. All companies which desire to do business with the government make quarterly statements to the treasury department on blanks furnished, which call for detailed information on all large risks and if the information so given is unsatisfactory, the risk objected to must be further secured as directed on pain of forfeiture of the privilege of doing any business with the government. In this way, and without warrant of law,

the treasury department exercises a supervision of surety companies which is effective and likely to become more so through examination by national bank examiners. Thus far the supervision has not been burdensome. On the contrary, rules made by the department are recognized as having had a wholesome and beneficial effect and to have caused a discontinuance of the issuance of large unsecured bonds often in surety lines as large as the entire capital of the executing company, and in this way as having removed a very serious menace to the business.

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CHAPTER LXIV
TITLE INSURANCE
BY J. WRAY CLEVELAND

TITLE insurance originated in Philadelphia in 1876, the Real Estate Title Insurance and Trust Company of that city being the first company to apply the insurance principle to a field very different from life, fire or other insurance. In all these latter classes of insurance the losses to a large extent offset the premium account.

Title insurance entered a field where the losses were comparatively small, but where the expenses were burdensome in the extreme, and the conduct of the business was accompanied by much annoyance and delay. Titles to real estate had been passed during most of their history on the strength of opinions of counsel; and, as it was obviously not advisable to have parties with different interests represented by the same attorney, it usually followed that the work was done anew each time at great expense, although experience showed that the losses escaped by so doing were trifling in comparison.

It occurred to the organizers of the first company that all that was needed to destroy the reason for the old system was to get for a single fee paid once and not annually, a single opinion of counsel upon which an endless row of successive owners could rely with equal safety. To get such an opinion they considered it was only necessary to place the attorney where he acted for a corporation which would pledge its capital to make good, to any one of the successive owners holding its policy, for any loss from mistake in that opinion. It made no difference that each consecutive buyer and seller should have his title examined by the same company because the results were guaranteed and it was to the absolute financial interest

of the company that the work should be correctly done, and no risks taken which could be avoided by proper care.

Title insurance does not take known hazards any more than a fire company insures burning buildings. It selects the good titles and puts its seal upon them so that they pass current. The risk is infinitesimal as compared with that in fire insurance, where chance has much to do with it, or in life insurance, where death is certain to come. The relations of the loss account to the expense account are, therefore, exactly reversed as between the two classes. In title insurance the expenses are heavy because the work is of a professional and scientific character and must necessarily be practically commensurate with the business done. The losses, however, should not be large if the work is properly done.

The simplicity, as well as the soundness of the principle, are such that the public has fully appreciated and accepted it and almost immediately after the establishment of the original company, others were organized in New York, Boston and practically without exception, in every city of considerable size in the United States and the business is now very largely in their hands.

Attorneys at law were at first opposed to these companies, fearing that their business would be taken away, but it was not long before the more progressive of them appreciated that they had been furnished with a new tool for the safer conduct of their business. They found that by turning over this kind of work to the companies and charging their client something of a fee for looking after the business end of the transaction that they were still able to take care of their client's real estate business and yet have a large portion of their time free for other equally lucrative work. The title companies in Greater New York today probably receive as large a portion of their business through attorneys as from other clients.

The rapid growth of title insurance in Greater New

York resulted from the fact that defects in titles could not be prevented by a lawyer's examination. They cannot be prevented by title insurance but the evil results are borne by the company and not by the individual. There are not so many troubles in titles that arise from carelessness on the part of the examining attorney. They arise from things which could not be discovered. If a man be secretly married his wife would not join in the deed and the purchaser takes the property subject to her dower rights. If someone a few steps back in the chain of the title was under age at the time he or she signed the deed, no title passes under the deed. If anyone in the chain of title should be insane at the time of the execution of the deed a defective title would result. Neither lawyers nor title companies can discover these things except in the rarest instances. When the trouble comes the title insurance company shoulders the burden, while the lawyer naturally and properly claims that he is not responsible as he did the best that he could. There are many intricate law questions which must be decided in the examination of a title, and the judgment of attorneys will differ in regard to these. In some cases they are so doubtful that the court's decision may be either way. If the attorney decides wrongly the client suffers; if the title insurance company decides wrongly it assumes the resulting losses. It is on this account that the best attorneys today prefer to handle their real estate business through these companies. The question of insurance of title is no longer an experiment. The only question to be determined is the choice of the company in which it is to be taken out. The expenses are heavy and a profit can only be made by the companies doing a large business and doing it in a way that is surrounded by every possible safeguard. The largest company in New York City, of which the writer is secretary, has never paid one cent of its title insurance earnings to its stockholders. These have

been kept entirely in reserve to meet its losses and the dividends paid have come entirely from interest earnings.

Another reason for the uplift of the business aside from its greater safety and far greater economy, has been the speed with which the transaction can be perfected. To reach this and at the same time promote their safety, the title insurance companies found it necessary to make copies of the real estate records of the counties in which they proposed to operate. In a large city this means a stupendous undertaking. It involves the copying of every description of every piece of land described in every instrument affecting land, recorded in the register's or county clerk's office, from the earliest record down to the latest. In New York county, for instance, the number of such descriptions runs into many millions. These are copied and sorted, not according to the names of the parties to them, as all such records are usually kept, but according to the properties affected. A ledger account is opened with each separate lot of land, in which account is entered every instrument affecting it. This assortment is made, mechanically, with a system of checks and counterchecks as efficient as a trial balance in bookkeeping. Thus the record of the piece of land is arrived at with absolute certainty, a thing that is never true of any index according to names. The record is kept up from day to day by copying every instrument recorded the day before, and posting the results to the proper accounts.

Although the cost of such a plant is enormous, it at once justifies its compilation by the extraordinary facility which it gives to the company in making its legal examinations of titles. Instead of the old and laborious practice of digging out the title and making an expensive and slow search through the indices, a part of the work which consumed much of the time before required, the ledger



account with the lot which is practically the complete abstract of its title, is at once placed in the company's law department's hands and every instrument passed upon by a skilled real estate lawyer, verified by another, and the legal sufficiency or insufficiency of the title demonstrated. If the title is found perfect, the policy of guarantee is issued and the history of that title, in the plant, marked sound and it never has to be investigated again. If the title be found defective, an entry to that effect is made on its record, and the company warned off from it, until something new cures the defect. As the business of the company increases in volume, it gradually transforms its plant from a collection of unexamined abstracts into a collection of examined and approved ones.

As the work of the company gradually covers the city, it meets, more and more, the routes previously travelled in great part, and saves more and more in the average time required to put through each new transaction. Of course any piece once insured can be transferred very simply and very quickly, and the policy re-issued to the new purchaser.

The importance of such an accumulation of information affecting the most stable part of the community's wealth, arranged so as to be at once available, is very apparent. If a railroad company wishes to get the name of every lot owner throughout the length of an avenue, for procuring consents, this locality plant can at once produce them. If the comptroller or the district attorney wishes to know whether a proposed bondsman owns the property claimed, the same machine can at once give the answer and tell what the mortgages upon it are. If the health authorities wish to know the name of the owner of a piece of property where a nuisance is maintained, or the police department that of the owner of a disreputable house, the locality index furnishes the information.

If an intending purchaser or lender is going to buy or lend, to know the past history through what hands it has been, what it has been sold for, or what loans may have been made previously, or perhaps, at what amount it has been sold or mortgaged—he can be helped by reference to this invaluable index from a bad bargain or helped to a good one in these incidental conveniences that the new system, with its locality index is exerting a powerful influence for the permanent advancement of real estate interests. It is the general feeling of the public that it is giving to real estate what it has always been the most steady investment to be had, but it has been hampered in the past because they were so hampered in the past have disapproved it as collateral investments because the question of title was so tedious delays and great expenses were involved in the consideration of it. By simply settling the title once for all, and having the title insurance put its stamp upon it, the one great obstacle to the availability of real estate as real investment has been removed.

Every year is seeing a wide extension of the availability of real estate. Mortgage loans are being generally accepted as collateral investments by the national banks, where the statute remains in force, though the reason for its existence exists. Trust mortgages on real estate, bonds and certificates issued against mortgages in denominations of \$200, \$500, \$1000, in negotiable shape, are now common because by the insurance of the title by the bond or certificate, the old question

facility that attaches to a railroad investment is thus secured for the safer and more stable real estate investment.

Policies

Policies of title insurance vary but slightly in form in the various cities, the main difference being that in some cities the companies insure only against loss or damage by reason of defects of title, while in others, as in New York, in addition they insure against loss or damage by reason of unmarketability of the title. In the first class of cases there might be a cloud on the title or some old lien or claim of ownership outstanding which had no validity or could not be successfully enforced and was, therefore, insured against, and yet the company would not be liable unless the insured had been ousted from the property or the lien had been declared a good and enforceable one against the property. With such a policy the insured would have no remedy against the company if he sought to mortgage or sell and had been unsuccessful because of these outstanding claims, which speaking technically had made the title unmarketable, or such as a mortgagee or purchaser would not be compelled to take. In the other class of cases the policy insures marketability, and if the insured should make a valid contract to mortgage or sell the property and the mortgagee or purchaser refused to complete because of the cloud or alleged lien, the company would be required to make the mortgagee lend the money, or the purchaser take the title. It can readily be seen that the latter form of policy is far broader than the former, and that it is the only one which would be acceptable in a community or city where real estate is active and the transactions of large volume. In New York City the marketability form is exclusively used.

The policy, which is substantially the form used by most of the companies in the large cities, is as follows:

“ The Company in consideration of the payment of its charges for the examination of title, insures heirs and devisees (or successors or personal representatives) against all loss or damage not exceeding dollars, which the insured shall sustain by reason of any defect or defects of title affecting the premises described in Schedule A, heretofore annexed, or affecting the interest of the insured therein, as described in said schedule, or by reason of the unmarketability of the title of the insured to or in said premises, or by reason of liens or incumbrances charging the same at the date of this policy; saving all loss and damage by reason of the estates, interests, defects, objections, liens and incumbrances excepted in Schedule B, or by the conditions of this policy, hereto annexed and hereby incorporated into this contract, the loss and the amount to be ascertained in the manner provided in said conditions and to be payable upon compliance by the insured with the stipulations of said conditions, and not otherwise.”

Schedule A has three subdivisions:

“ 1st. The estate or interest of the insured in the premises described below covered by this policy.” (Which may be in fee simple, as mortgagee, as lessee, or whatever may be the insurable interest.)

“ 2nd. The deed or other means by which the estate or interest covered by this policy is vested in the insured.” (Which is followed by a recital of the instrument; a deed, will, mortgage, lease, etc.)

“ 3rd. The premises in which the insured has the estate or interest covered by this policy.” (Followed by a careful and accurate description of the property.)

Schedule B consists of one heading as follows:

“ This policy does not insure against such estates, interests, defects, objections to title, liens, charges and incumbrances affecting said premises, or the estate or interest insured, as are set forth below in this schedule.”

(Under this is set forth everything which the company is not willing to insure against; as, for instance, a mortgage, a lease or leases, a judgment, a mechanic's lien, taxes, assessments, etc., which may encumber the property. It may also be that the parties have contracted to purchase subject to a dower right or to any other defect.)

The conditions of the policy are usually that the company will, at its own cost, defend the insured in all actions or proceedings founded on a claim of title or incumbrance prior in date to the policy and thereby insured against, and that the company shall have the right, at its own cost, to maintain or defend any action relating to the title insured, or upon or under any covenant relating to the title. That no claim shall arise under the policy excepting: (1st) Where there has been a final determination in a court of competent jurisdiction under which the insured may be dispossessed or evicted from the premises. (2nd) Where there has been a final determination adverse to the title, as insured, in such a court, upon a lien or incumbrance not excepted. (3rd) Where the insured shall have contracted in good faith in writing to sell the insured estate or interest, and the title has been rejected because of some defect or incumbrance not excepted, and notice of such rejection given to the company within ten days thereafter, in which case for thirty days after receiving such notice this company shall have the option of paying the loss of which the insured must present proper proof, or of maintaining or defending either in its own name or at its option in the name of the insured some proper action or proceeding for the purpose of determining the validity of the objection, and only in case of a final determination sustaining the objection is the company liable. (4th) Where the insurance is upon the interest of a mortgagee and the mortgage has been adjudged by a court to be invalid or ineffectual to charge the premises, or subject to a prior lien or incumbrance

not excepted. (5th) Where a purchaser at a sale under the judgment or order of a court of competent jurisdiction has been relieved by the court from the purchase by reason of the existence of some lien, incumbrance or defect of title not excepted. (6th) When the insured shall have negotiated a loan on the security of a mortgage on the property or interest, and the title has been rejected, then, if there be no dispute as to the facts the company will consent to the submission of the matter to the Supreme Court, and upon the judgment of such court shall depend the liability of the company. (7th) Where the insured shall have transferred the title by an instrument containing covenants in regard to title or warranty thereof, and there has been a final judgment rendered in a court of competent jurisdiction against the insured, or the heirs, executors, administrators or successors of the insured on any of such covenants or warranty and because of some defect of title or incumbrance not excepted. That no transfer of the policy will be valid without the written consent endorsed thereon by the proper officer of the company; that any untrue statement made by the insured, or the agent of the insured, with respect to any material fact, or suppression or failure to disclose any material fact, any untrue answer, by the insured, or the agent of the insured, to material inquiries before the issuing of the policy, shall avoid the policy. That the insured shall notify the company immediately of any attack upon the title; that it shall be the duty of the insured to secure to the company the right and opportunity to maintain or defend the action or proceeding, and all appeals from any determination therein, and to give all reasonable aid, and to permit the use of the name of the insured at the option of the company. If such notice shall not be given to the company within ten days after service of the first summons or other process in such action, the policy shall be void. That the company agrees to

pay in addition to the loss, all costs imposed on the insured in litigation carried on by it for the insured under the requirements of the policy; but it will in no case be liable to the insured for the fees of any counsel or attorney employed by the insured; and the costs and loss paid shall not together exceed the amount of the policy. That in every case where the liability of the company has been definitely fixed the loss or damage shall be payable within thirty days thereafter, provided, that the company may demand a valuation of the insured estate or interest, to be made by three arbitrators or any two of them, in the usual way, and then no right of action shall accrue until thirty days after such valuation shall have been served upon this company, and the insured shall have tendered a conveyance or transfer of the insured estate to a purchaser to be named by the company at such valuation, less the amount of any incumbrance on said insured estate or interest not insured against and the company shall have failed within that time to find a purchaser for the estate or interest upon such terms. Provided, also, that the company shall always have the right to appeal from any adverse determination; but no appeal shall operate to delay the payment of the loss if the insured shall give to the company satisfactory security for the repayment of the amount of such loss, in case there shall be ultimately a determination in favor of the company, and provided, further, that in every case the company shall have the option of settling the claim or paying the policy in full. That whenever the company shall have settled a claim under the policy it shall be entitled to subrogation, and that the company does not insure against defects arising after the date of the policy, or created or suffered by the insured.

The policy protects the insured so long as he may hold the same. If he conveys with warranty, it protects his

covenant. If he dies as owner, it ent his heirs or devisees.

Fees

There are no renewal fees to keep as in other forms of insurance. Tl different localities, depending nature of work and labor entailed, and ar classes of insurance, upon the amou this limitation, that the successful o it necessary to decline to insure for total amount of the value, or purcha may be, of the property inclusive the total amount of the mortgage, f there was a substantial loss the co over the property at the full value c mortgage, trusting to making good the loss. They are unwilling, therefo mum of risk unless upon the enti There is usually a minimum fee, an the companies have set this at \$65, o to \$3,000. Outside of Manhattan Bo less. In transactions involving \$10 figured on an initial fee of \$50, plus cent., and in transactions of over \$40 of \$150, plus one-quarter of one per added the cost of drawing and re making surveys, which latter vary g of which cannot be set out in detail this article.

The unpleasant experience of the and kindred investments where the i thing and the outsider nothing, has of the cautious to landed securities and which cannot be manipulated so

son cannot tell whether they are worth anything or not. It is the part of wisdom in the bankers, the legislators, the conservatives of every class, to encourage this tendency; and in accomplishing the results desired, the title insurance companies are having, and will continue to have, no small part.

CHAPTER LXV TORNADO INSURANCE

BY ALEXANDER T. LUMBY

LIKE fire, the wind is a good servant, but a bad master—at one time, as Zephyrus, it carries Psyche to her waiting husband; at another, as the gift of Aeolus, it drives Ulysses and his sailors far from their course and the country they are seeking. In the progress of years the laws that control its motion and the cause and character of that motion have been observed and studied and are now fairly well known. Up to a time quite recent, the wind had not been considered a feature for specific consideration in underwriting, save as a factor in increasing the spread of a fire or driving a vessel to disaster.

As early as 1865 the companies began issuing tornado policies to protect against damage by storm, but it was not until 1880 that the business assumed any considerable magnitude and, even now, it is a subordinate line compared with fire insurance, the majority of companies declining absolutely to engage in it, on account of the small income and low rates on the one hand, and the possibilities of enormous liabilities and losses coincident with sweeping storms on the other. The business began in a somewhat experimental way with a simple contract and widely varying rates which later ran into a general flat figure of a half per cent. in the early eighties; it being argued supposedly that one risk as against wind was about the same as another. A feature in the earlier tornado contracts was to disclaim liability for losses under a given sum, running from \$10 to \$50. This has been discontinued in recent practice and the present tornado policy does not contain such exclusion of liability.

The form of policy in wind storm insurance is officially

standard in the state of Louisiana, having been filed with the State Fire Rating Board and is also standard with nearly all companies writing this business. It is the outgrowth of a series of meetings held in 1905 by the officials of such companies and contains the best parts of the individual policies, selected out of the forms with care so as to provide for the various contingencies liable to develop in this insurance. As a whole the contract is phrased along the lines of the standard fire policy prescribed and made official by the State of New York, and, up to this date, it has proved to be a just and efficient form of contract, especially in view of the practice of all reputable companies in interpreting its conditions so as to give favorable consideration and the fullest measure of justice to all honest claimants.

The business first grew into shape in the western part of the country where the prevailing type of destructive wind is the tornado. This is probably the most intense, rapid and overpoweringly destructive wind that is known. It differs from other winds in the characteristics mentioned, and also in its more limited scope of destruction. Perhaps as accurate a description of this particular kind of a storm as can be given is to liken it to the progress and motion of a boy's top. It is a rotating, funnel-shaped wind of great rapidity, estimated at 200 miles an hour, traveling a path that will range from 100 feet to a mile or so wide, according to whether the "peg," so to speak, is at the ground, or whether the storm has dipped to a lower point, so that the bulge is of a greater diameter. The storm while rotating on its individual axis is also traveling in a circular path around another axis. Sometimes the peg lifts itself slightly above the ground, and it was observed in the St. Louis tornado, that in certain cases objects thirty or more feet above the ground were caught, while those at a lower elevation escaped. This was particularly noticed in the case



of certain trees, where the upper part of the tree was stripped of leaves and branches while the trunk and the lower branches were unharmed.

Other winds which enter into the consideration are cyclones; also the West Indian hurricanes, which originate in the Antilles and reach up destructively along the Gulf Coast, and the Atlantic shore, northward to the Canada line, having a diameter of 150 to 250 miles with an influence 500 to 600 miles across. Besides these are local storms of more or less destructive character.

These storms are not limited to any section although popularly supposed to prevail in the west. Woodhaven, a town east of Brooklyn, was partly destroyed by one some years ago. Buildings have been wrecked even in New York City—visitations of widespread damage have occurred at Binghamton and Chappaqua, Westchester County, N. Y. Newark, N. J., suffered extensively a couple of years ago; Philadelphia suffered greatly from a violent storm in the spring of 1911 involving great damage. Maryland has had its share, also New Haven, Conn., and South Lawrence, Mass., so that it is reasonable to say that no section of the country is exempt from this danger. Up to some time ago, the Pacific Coast had been comparatively free from these visitations but even that record has been broken.

In conjunction with these storms, various characteristic features of damage wrought have been observed. The usual thought is that a building is blown down by the impact of the wind against its walls or roof. Such is usually the case but in some instances the damage occurs in exactly the reverse way. A vacuum effect accompanying the storm causes the air pressure from the inside of the building to press the walls out and overthrow them. In many instances photographs show this plainly. A number of such that have come under the observation of the writer, show—particularly in the case of churches—

that walls have pushed out and fallen away from the building, while in other cases (notably buildings with shingle roofs), the air in the building has found vent along the line of least resistance by tearing a passage through the roof, making a ragged, partly circular hole six feet or so in diameter through the roof, leaving the rest of the structure uninjured.

A somewhat common freak of the ordinary windstorm is to strip a tin roof entirely off the building, and cases have been known where such a roof has been carried hundreds of feet from a building and thrown down on the ground. In two views taken, one such roof is hanging over a telegraph wire and the other lodged in a tree.

The construction of buildings has been found by experience to be a material factor in the susceptibility to damage. For example, churches represent a notable feature of such hazard. They are constructed without interior walls and partitions which brace and stiffen the structure, and the wreck of such buildings is as a rule very great. Buildings open at one end, as in the case of cotton warehouses, may be wrecked by the wind driving into the open end, and, being pocketed at the closed end, pushing the end and side walls over.

This was a marked feature in a storm some years ago in Mobile, Ala., where the cotton warehouses in that city suffered more than other buildings. This feature has been observed and acted upon for years in the West Indies, where the buildings are constructed with heavy walls, and the windows with batten storm shutters for protection against wind pressure. If, upon the approach of a hurricane, the occupants of the building do not have time to close the shutters, they then make it a rule to open them all, so that the wind will have means of exit and blow through the house and thus avoid the accumulation of a wind pressure that will rend the entire structure apart.

The enormous power of a windstorm can scarcely be appreciated by one who has not experienced it. It would seem almost impossible that any wind should be strong enough to blow an open trusswork iron railroad bridge from its place, and yet cases exist where this has occurred. At St. Paul, Minn., several sections of a railroad bridge crossing the river were blown from their places and thrown to the ground. At Kansas City, Mo., one of the sections of the Hannibal & St. Joseph R. R. bridge was driven off the piers into the river. An iron roadway bridge at Rochester, Minn., was blown down entirely. A curious illustration of the power of the wind occurs in a picture published in one of our magazines where straws are shown driven into a fence rail, the same as one would drive nails with a hammer. Structures of the greatest strength go down before the impact of tornadoes; masonry stacks, a prison wall thirty inches thick, bridges and trestles. A house in Cleveland, O., was turned upside down. A photograph shows it standing on its roof.

Experience has demonstrated that there is a wide diversity as to risks, considered with relation to windstorm damage, the same as has been found to be the case with fire insurance. As was stated previously, churches make poor subjects for tornado insurance; fertilizer factories—buildings of large area, high, and without cross walls—have shown very poor results. Injuries to stocks of goods have been much worse than the buildings in which they were contained. It has been the aim of insurance companies in dealing with this subject to determine which they should class as ordinarily hazardous, and which as especially so. The original flat rate, with which the companies commenced to write the business has been superseded by schedules more or less diverse, and intended to reflect the measure of hazard of susceptibility, and probable damage, direct and indirect. In the course of experience the consequential damage feature has come

into play, and is a factor of considerable moment; for example, it may perhaps happen that a building is unroofed, or otherwise damaged, to a partial extent, and its contents be exposed to serious harm by rain or by hail occurring coincidentally with the windstorm. A case in point arose recently where windstorm insurance was carried on a lumber shed and on the contents of the shed. The shed being destroyed, the lumber was overthrown with comparatively little damage to it, but a heavy claim was made by reason of the wetting of the lumber and its consequent warping. This feature of susceptibility is of great importance, and must be thoughtfully considered, if an insurance company is to do justice to its patrons by applying rates that will accurately measure the hazard. Thus, for example, in an experience running over several hundred claims on mercantile risks, it was found that the average claim on stock was nearly five times the figure on the building. This was due, in part, to the fact that the stock represented the larger value, but, mainly, because of the greater consequential damage.

The locality is also a vital feature with which to reckon. Property situate along the Gulf Coast is subject to widespread and extensive damage, running over hundreds of miles in distance, and as many hundreds of miles in width. In storms, such as that of September, 1909, claims were filed against the companies running into the hundreds of thousands, while damage to uninsured property reached enormous figures. The sea coast storm damage is of the character of that dreaded feature of loss in fire insurance, the conflagration. The storm quoted above ravaged the lower tier of Louisiana and Texas for many miles north of the coast line.

The immediate location of risks is a material matter as well. Properties situate adjacent to a water front have caused more difficulty probably than any others, and, in fact, it is often impracticable to determine where

actual wind damage ends, and water. In consequence, companies hesitate at all, preferring to go without the benefit of insurance, than to be subjected to claims against which they are not prepared to fight, and which may lead to controversy. A case in point occurred some years ago. A company had insurance upon a bridge, and the bridge was carried away by a tidal wave pushing against it, or was destroyed, by a vessel, wrecked in the same manner, against it and demolishing the structure. The agents of these agents doubtless caused the loss, but however, was made that the loss was covered.

Or buildings are lifted off their foundations, and, if there be tornado insurance, claim is made. A building, standing on piles driven into the beach, was wrecked, unquestionably by a tornado. Various newspapers so reported it, the local reporters were to that effect, and their reports of the destruction was freely given; also the wreckage indicated the same. The wind was, however, requisitioned for payment. The company engaged the best attention of tornado insurance years in earnest and conscientious endeavor to frame a form of contract that will, or at least, exempt the company to a proper liability, and exempt it from being called upon to pay for damage properly chargeable to it in either case.

Another feature of contract framing, which is necessary, is the matter of indemnity. Many were willing to insure their property for an amount that would pay for window glass, roofs rolled up, ornaments and cornices blown down, metal smoke stacks and chimneys destroyed, and the sundry and divers damage that an ordinary wind would do to premi-

unwilling to insure for an extensive proportion of the value of the property. If companies were to issue policies in that way ordinary rates would not suffice to pay the losses; and, with a desire to avoid making any burdensome requirement of the property owner on the one hand, and in the endeavour to approach a proper contract for themselves on the other; there has been a general adoption of a rule requiring owners to insure 50 per cent. of the value, and tornado insurance is now generally written subject to the 50 per cent. co-insurance clause. This is a stipulation that insurance equal to 50 per cent. of the value shall be maintained, or, in default of doing that, the recovery shall be in such proportion to the loss as the amount of the insurance bears to 50 per cent. of the value of the property insured. The companies writing tornado business are obliged to study features of construction, the susceptibility of various roofs, and the walls, and, as far as possible, to classify the risks offered for insurance according to the hazard of the same. Perhaps the rate list of the Southern Tornado Insurance Association is one of the most elaborate; in any event, it is the one most familiar to the writer. It has separated the risks into about forty divisions, and subdivisions, for inland risks and as many for coast districts, each one taking a separate rate.

In this connection, it is interesting to note that a number of these show reductions from the original rate of 50 cents per \$100, so that twenty-four of these classes are written at 50 cents and less. It is, however, questionable if these rates are adequate, especially at the coast. The periodic West Indian storm involves such widespread damage, and so many large liabilities, that the opinion is freely expressed that, at existing rates, the business can never be permanently profitable. In view of the growing popularity of better forms and grades of construction, and by eliminating weak and poor struc-

tures, the business, with careful handling, may, in the average of years, afford a living return. It is something of a question whether a frame building represents a greater tornado hazard than a brick. When a frame building is damaged it often happens that the whole structure is so wrenched out of place and plumb that the repair work is almost equal to the cost of new construction. In the case of brick buildings, the system which prevails somewhat, in America, of building the side walls complete, and then facing the front and rear walls on, in place of tying corners of the walls together, by weaving the bricks in and out, and breaking joints, makes the structure that much weaker.

Higher rates are charged at the sea coast than prevail at interior points for the reason already cited. A system of rating for windstorm insurance, devised by a field man in a state where a large business in that line is done, assumed as a basis a brick or concrete building twenty feet high, 5,000 square feet area, fifty miles or more from the coast. To this he applied an initial rate, and to that added a charge for each 1,000 feet excess area, another for each extra foot of height, one for each mile of approach to coast line, for deviation in construction, for various roofs, for overload of contents, for vibrating machinery. This would make a logical system of rating, but would involve such an enormous labor to apply to widely separated properties, that it has not been adopted nor used to any extent.

Experience has also shown that the presence of a good foundation is a material factor in the strength of the building against windstorm, the observation being that in the course of the recent cyclone, in one of the Southern States, the great majority of the buildings damaged were those that stood on wooden posts. The building was, in almost every instance, pushed from this support, sometimes overthrown entirely, and at other

times, wrenched to such an extent as to be practically a total loss.

A question of liability, under a tornado contract, exists in the possibility of a building being overthrown by a storm, and taking fire in falling. In the event of such an occurrence, how would the liability be apportioned between the windstorm and fire insurances? Under the conditions of a fire policy, if a building falls, the insurance ceases, and, therefore, if the building were prostrate upon the occurrence of the fire, the liability of the fire policy would have terminated by its conditions. It is a situation one would think might often occur, but, as a matter of fact, it is not only rare, but, so far as the knowledge of the writer goes, it has not happened, at least, not in such a way as to cause any complication or difficulty in adjustment. The measure of damage inflicted by the wind would have a bearing on the matter. This is perhaps one of the cases where the actual event will bring about its own solution, and establish a precedent for the determination of others of like nature, if such should arise. In the meantime, and until the bridge has been reached, no one has fully set the pace at which to cross it.

Another point has been raised, in the case of a mill, or other building, equipped with automatic sprinklers, which latter might be damaged in such a way as to rupture the pipes carrying water for the sprinklers and thus cause, indirectly, a considerable damage by water to the premises. Here the situation is still further complicated by the possibility that the owner was protected by insurance, such as is issued by casualty and some fire insurance companies, specifically against loss or damage by sprinkler leakage, however caused. The question has been raised whether tornado insurance on the building would be liable for sprinkler leakage caused by a windstorm, and, if so, what its relation to, and contribution

with, the sprinkler leakage policy would be. An involvement with loss or damage to plate glass broken by the wind, and insured also under what is known as plate glass insurance by companies issuing such policies, is another possibility. The standard tornado policy, however, takes care of this matter by direct provision.

One feature of the business to be considered is what is called the moral hazard. This may prevail in fire insurance where a property owner yields to temptation and sets fire to his property for the sake of realizing upon his insurance. This is manifestly impossible in the case of a tornado policy, and the moral hazard comes into play after the loss, rather than before, in the shape of excessive and possibly fraudulent claims.

Damage from leaky roofs is notified to the company with request that new papering and plastering be supplied. Buildings manifestly destroyed by water are notified to companies as liabilities from wind. The crowning case of expectancy cited is the alleged case of the man who laid claim under his windstorm policy for restitution in the case of a horse which died of wind colic.

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